User's Guide

TRENDNET®

PWR
WIFI
PL
1
2

TRENDnet

TPL-410AP - Powerline 500 AV Wireless Access Point
TPL-410APK - Powerline 500 Wireless Kit

TPL-410AP / TPL-410APK

Contents

Product Overview

TPL-410AP

TPL-410APK

Package Contents

TPL-410AP package includes:

- 1 x TPL-410AP Powerline 500 AV Wireless Access Point
- Quick Installation Guide
- CD-ROM (Utility & User's Guide)
- Network cable (1.5 m / 5 ft.)

TPL-410APK package includes:

- 1 x TPL-410AP Powerline 500 AV Wireless Access Point
- 1 x TPL-406E Powerline 500 AV Nano Adapter
- Quick Installation Guide
- CD-ROM (Utility & User's Guide)
- 2 x network cables (1.5 m / 5 ft.)

If any package contents are missing or damaged, please contact the retail store, online retailer, or reseller/distributor from which the product was purchased.

Features

Powerline 500 AV Wireless Access Point (TPL-410AP)

TRENDnet's Powerline 500 AV Wireless Access Point, model TPL-410AP, uses an electrical outlet to create or expand a wireless network. Two Powerline adapters are needed to start a network. Connect one adapter to a router and plug in the TPL-410AP on your electrical system to create or expand a high performance wireless network.

Powerline 500 Wireless Kit (TPL-410APK)

TRENDnet's Powerline 500 Wireless Kit, model TPL-410APK, uses electrical outlets to create a hybrid Powerline-Wireless network. The included TRENDnet Powerline adapters (TPL-406E + TPL-410AP) auto-connect out of the box. Network the TPL-406E to a router and plug the TPL-410AP into an outlet on the electrical system to extend a high performance wireless network. Hardwire a smart TV, gaming console, or media player to the two Ethernet ports on the TPL-410AP.

Powerline

Auto-Connect Powerline

Simply plug in the Powerline adapters—all TRENDnet adapters auto-connect out of the box

Sync Button

Press the Sync button to change existing Powerline encryption keys

Pre-Encrypted

For your security the Powerline signal is pre-encrypted

Powerline 500

High speed Powerline networking over existing electrical lines

Ethernet Ports

Two convenient Ethernet ports to hardwire computers, smart TVs, and other network enabled devices

Cross Compatible

TRENDnet Powerline 500 and 200 adapters work together

Whole Home Coverage

Connects over electrical lines for houses up to 5000 square foot home (300 m/984 ft. linear distance over electrical lines)

Wireless

Quick Setup

Get up and running in minutes with the intuitive guided setup

N300 Wireless

Proven 300 Mbps Wireless N

Wireless Coverage

Expanded wireless coverage with MIMO antenna technology

Pre-Encrypted

For your security the wireless is pre-encrypted with a unique password

One Touch Connection

Securely connect wireless devices at the touch of the Wi-Fi Protected Setup (WPS) button

Compatibility

Compatible with legacy 2.4 GHz Wireless devices

* Maximum wireless signal rates are referenced from IEEE 802.11 theoretical specifications. Actual data throughput and coverage will vary depending on interference, network traffic, building materials and other conditions

** 500 Mbps is the maximum physical Powerline data rate. Data throughput may vary by circuit wire condition overheads. Maximum of 8 adapters (nodes) recommended for streaming video across your network.

*** Powerline networking is limited to the same electrical system. Power strips, GFCI outlets, and AFCI circuit breakers may degrade Powerline signals.

Product Hardware Features

TPL-410AP

Device Label

Product Model
Serial Number
MAC Address
Hardware Version
Wi-Fi Network Name (SSID)
Wi-Fi Security Key
Device Management URL
Default User Name
Default Password
Powerline Device Password

Model: TPL-410AP (/A, /EU, or /UK)
S/N: ABXXXXXXXXXXX
MAC: XXXXXXXXXXXX
H/W: v1.0R   AC 100-240V, 50-60Hz, 0.2A
FCC ID: XU8TPL410AP
Wi-Fi Name/SSID: TRENDnet410_2.4GHz_XXXX
Wi-Fi Key: 410XXXXXXXX
Management login: http://192.168.10.100
Web username: admin
Web password: admin
DPW: XXXX-XXXX-XXXX-XXXX
Made in Taiwan

Front View

10/100Mbps Ethernet LAN Ports 1-2

Power (PWR) LED
Wireless (WIFI) LED
Powerline (PL) LED
LAN Ports 1-2 LEDs

TRENDNET

Side View

WPS Button

Sync/Reset Button

POWER

On/Off Power Switch (Powers device on or off.)

Power Prong

US   EU

UK

Button	Action	Function
Sync / Reset (see the section Using the Sync Button for instructions)	**Sync** Push/hold for 3 seconds, then release	Initiate Sync/Connection and generate random network name/key (PL LED will start blinking). *Note: The secondary or additional Powerline adapter's Sync button must also be pushed within 2 minutes (120 sec) of pushing the Sync button on the first adapter in order to establish connectivity.*
	Reset Push/Hold for 10 seconds, then release	Reset device to factory defaults (PWR, PL, and WIFI LEDs will turn off and turn back on to indicate reset). Note: Will reset to the factory default private network name "HomePlug AV".
WPS	**WPS** Push/Hold for 3 seconds, then release	Activates WPS (Wi-Fi Protected Setup). The PWR (Power) LED will blink to indicate WPS has been successfully activated.

LED	Color	Sequence	Definition
PWR (Power)	Green	Solid	Device powered on
	Green	Blinking	WPS is activated
	N/A	Off	Device powered off
WIFI (Wireless)	Green	Blinking	Wireless enabled, data transmitting/receiving
	N/A	Off	Wireless disabled
PL (Powerline)	Green	Solid	Powerline connected (Connection quality is Best)
	Green	Blinking	Syncing or Powerline data transmitting/receiving (Connection quality is Best)
	Amber	Solid	Powerline connected (Connection quality is Better)
	Amber	Blinking	Powerline data transmitting/receiving (Connection quality is Better)
	Red	Solid	Powerline connected (Connection quality is Good)
	Red	Blinking	Powerline data transmitting/receiving (Connection quality is Good)
	N/A	Off	Powerline is not synced or connected
LAN Ports 1-2 (Ethernet Connection)	Green	Solid	10/20 Mbps , 100/200Mbps (Half/Full Duplex) connected
	Green	Blinking	10/20 Mbps , 100/200Mbps (Half/Full Duplex) data transmitting/receiving
	N/A	Off	Port disconnected/no Ethernet link

Note: Powerline (PL) LED color indicates the strength and quality of the Powerline connection through the electrical system.

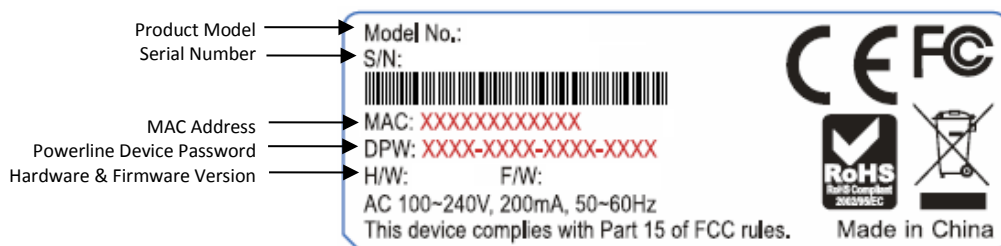*Note: The following factors may affect the Powerline network's connection quality:*

- ***Noise** – Generated by appliances which use your electrical system (e.g. Microwaves, ovens, blow dryer, iron, dishwasher, etc.). The quality of your household electrical wiring may also cause additional noise on your electrical system.*

***Distance** – Long lengths of electrical wiring through your electrical system between connected Powerline adapters.*

TPL-406E

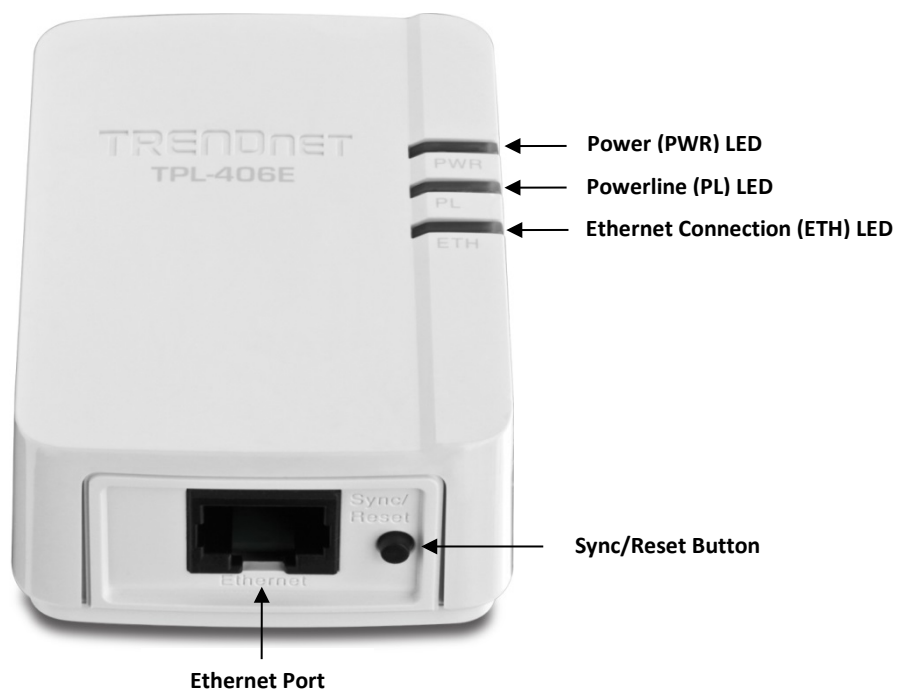> **Important Note:** Please note that the TPL-406E powerline adapter will only be included when purchasing the Powerline 500 Wireless Kit, model TPL-410APK.
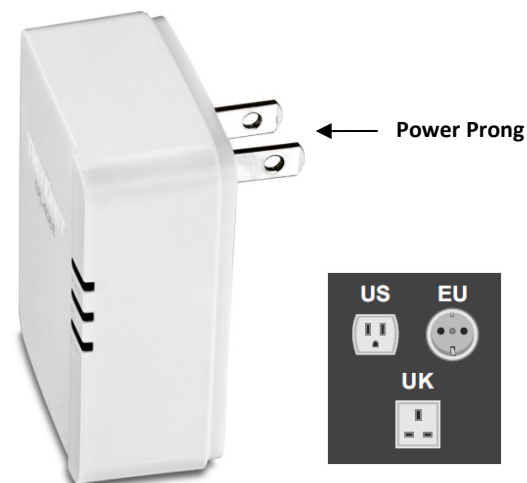
Device Label

Product Model	Model No.:
Serial Number	S/N:
MAC Address	MAC: XXXXXXXXXXXX
Powerline Device Password	DPW: XXXX-XXXX-XXXX-XXXX
Hardware & Firmware Version	H/W: F/W:

AC 100~240V, 200mA, 50~60Hz
This device complies with Part 15 of FCC rules.

Side View

→ **Power Prong**

US   EU

UK

Front View

→ **Power (PWR) LED**
→ **Powerline (PL) LED**
→ **Ethernet Connection (ETH) LED**

→ **Sync/Reset Button**

Ethernet Port

Button	Action	Function
Sync / Reset (see the section Using the Sync Button for instructions)	**Sync** Push/hold for 3 seconds, then release	Initiate Sync/Connection and generate random network name/key (PWR LED will start blinking). ***Note:** The secondary or additional Powerline adapter's Sync button must also be pushed within 2 minutes (120 sec) of pushing the Sync button on the first adapter in order to establish connectivity.*
	Reset Push/Hold for 20 seconds, then release	Reset device to factory defaults (All LEDs will turn off and turn back on). Note: Will reset to the factory default private network name "HomePlug AV".

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LED	Color	Sequence	Definition
PWR (Power)	Green	Solid	Device powered on
	N/A	Off	Device powered off
PL (Powerline)	Green	Solid	Powerline connected (Connection quality is Best)
		Blinking	Syncing or Powerline data transmitting/receiving (Connection quality is Best)
	Amber	Solid	Powerline connected (Connection quality is Better)
		Blinking	Powerline data transmitting/receiving (Connection quality is Better)
	Red	Solid	Powerline connected (Connection quality is Good)
		Blinking	Powerline data transmitting/receiving (Connection quality is Good)
	N/A	Off	Powerline is not synced or connected
ETH (Ethernet Connection)	Green	Solid	10/20 Mbps , 100/200Mbps (Half/Full Duplex) connected
		Blinking	10/20 Mbps , 100/200Mbps (Half/Full Duplex) data transmitting/receiving
	N/A	Off	Port disconnected/no Ethernet link

Note: Powerline (PL) LED color indicates the strength and quality of the Powerline connection through the electrical system.
*Note: The following factors may affect the Powerline network's connection quality:*

- ***Noise** – Generated by appliances which use your electrical system (e.g. Microwaves, ovens, blow dryer, iron, dishwasher, etc.). The quality of your household electrical wiring may also cause additional noise on your electrical system.*
- ***Distance** – Long lengths of electrical wiring through your electrical system between connected Powerline adapters.*

Power Saving (TPL-406E): The device will automatically reduce power usage when the connected device via Ethernet is powered off, unplugged or inactive for more than 5 minutes. The device will return to active mode when the connected device via Ethernet is powered on and the link is active.

Note (TPL-406E): This device offers EU compliant Standby mode functionality. To turn off the device, unplug it from the power outlet.

Note (TPL-410AP): This device offers EU compliant Off mode functionality. To turn off the device, push the power switch into the off position.

Application Diagram
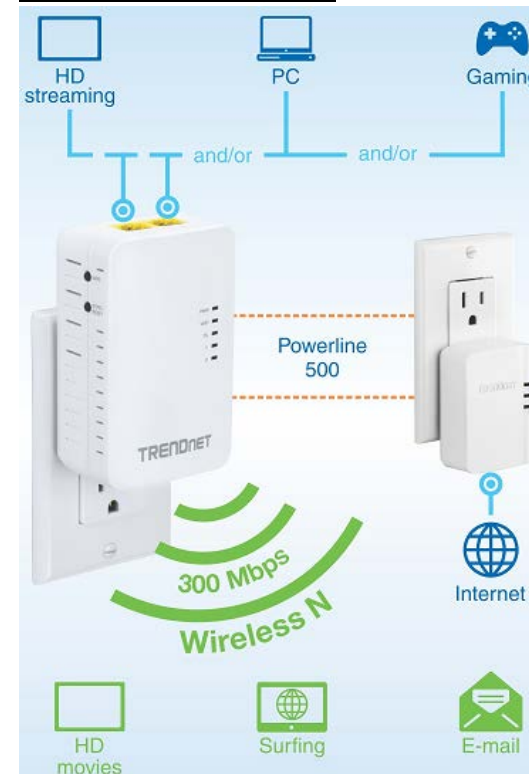
The first Powerline unit is networked to a router which is in turn connected to a modem (typically from your Internet Service Provider (ISP)) which provides Internet connectivity (ex. TPL-406E). The Powerline Access Point is plugged into a wall power outlet near a media center and can allow a network game console and another network enabled media device such as a network enabled media player to connect to the Ethernet ports and provide Internet connectivity and WiFi connectivity.

Expanding a Home Network

What is a network?

A network is a group of computers or devices that can communicate with each other. A home network of more than one computer or device also typically includes Internet access, which requires a router.

A typical home network may include multiple computers, a media player/server, a printer, a modem, and a router. A large home network may also have a switch, additional routers, access points, and many Internet-capable media devices such as TVs, game consoles, and Internet cameras.

- **Modem** – Connects a computer or router to the Internet or ISP (Internet Service Provider).
- **Router** – Connects multiple devices to the Internet.
- **Switch** –Connect several wired network devices to your home network. Your router has a built-in network switch (the LAN port 1-4). If you have more wired network devices than available Ethernet ports on your router, you will need an additional switch to add more wired connections.

How to expand a home network

Wireless Access Points add or extend wireless connectivity to an existing network.

Integrated Powerline technology allows you to further extend your network using your existing electrical system in your home using multiple powerline adapters.

Where to find more help

In addition to this User's Guide, you can find help below:

- http://www.trendnet.com/support (documents, downloads, and FAQs are available from this Web page)
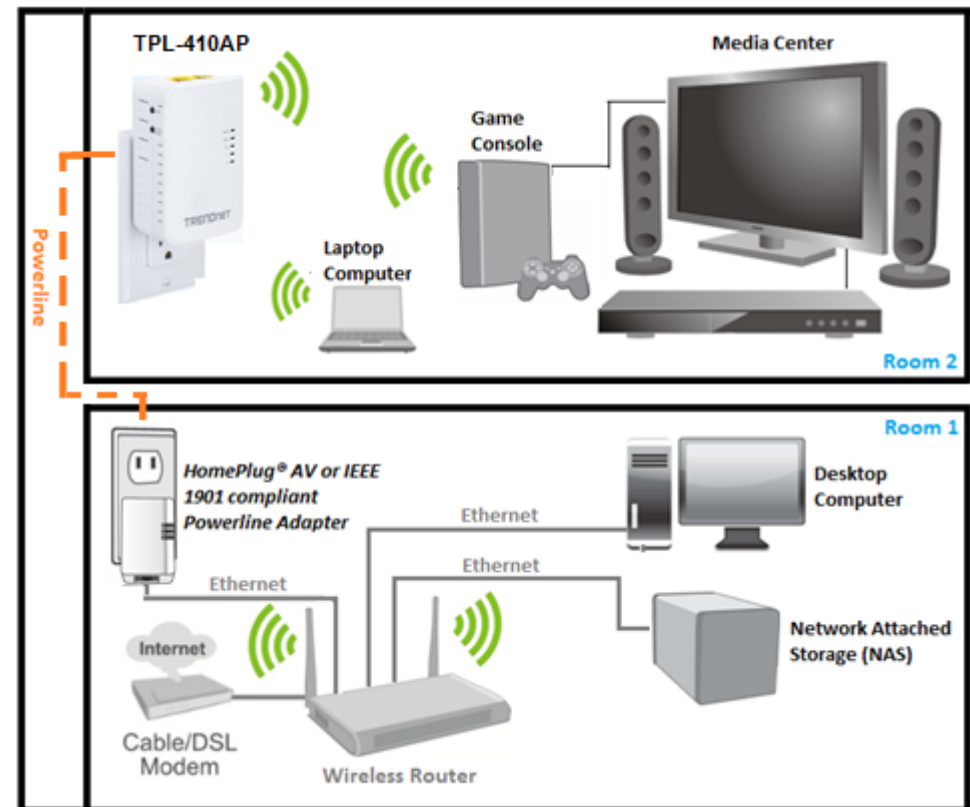
Basic Installation

Note: It is recommended to plug the adapters into nearby outlets before installing the devices to the desired locations.

Note: If you are connecting the adapters to a third party powerline device other than TRENDnet and encounter issues, please refer to the manufacturer's documentation for the appropriate sync button procedure.

Note: The sync button procedure steps below demonstrate using TRENDnet powerline model TPL-406E (included with the Powerline 500 Wireless Kit only) but the same procedure applies to TRENDnet powerline models TPL-303E/304E/308E/4052E 407E/408E/420E.

Connecting the adapters using Powerline
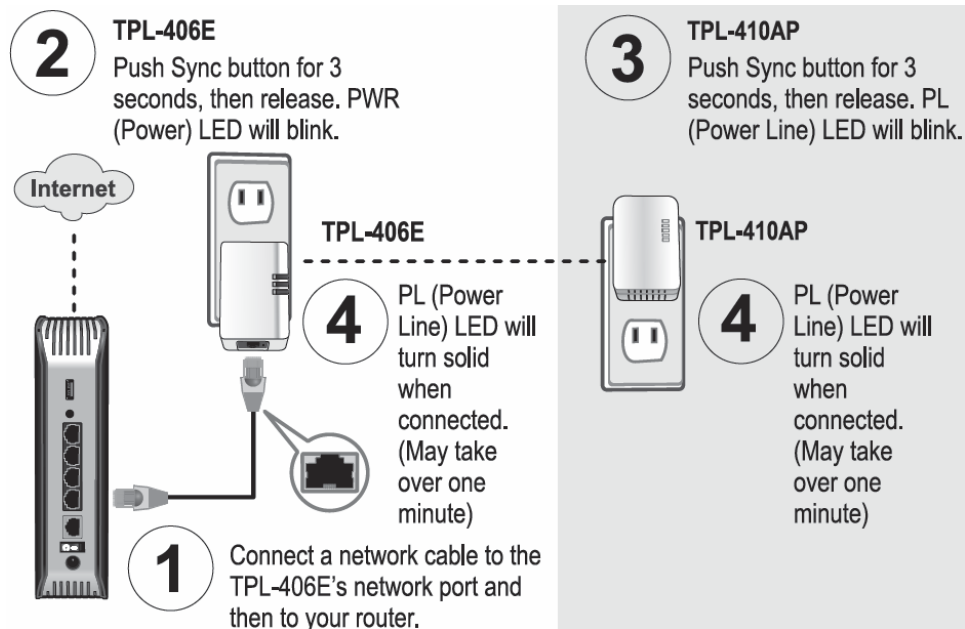
5. Once you have successfully connected the powerline adapters through the electrical system, you can move the TPL-410AP to the desired location to create or extend wireless connectivity to your existing network.

6. For added security the TPL-410AP has been pre-configured with a unique wireless network name (SSID) and wireless key which can be found on the Preset Wireless Settings sticker or device label. Use these settings to connect your wireless laptops, mobile devices, and other wireless network devices to your network.

Move TPL-410AP to the desired location and connect your wireless network devices
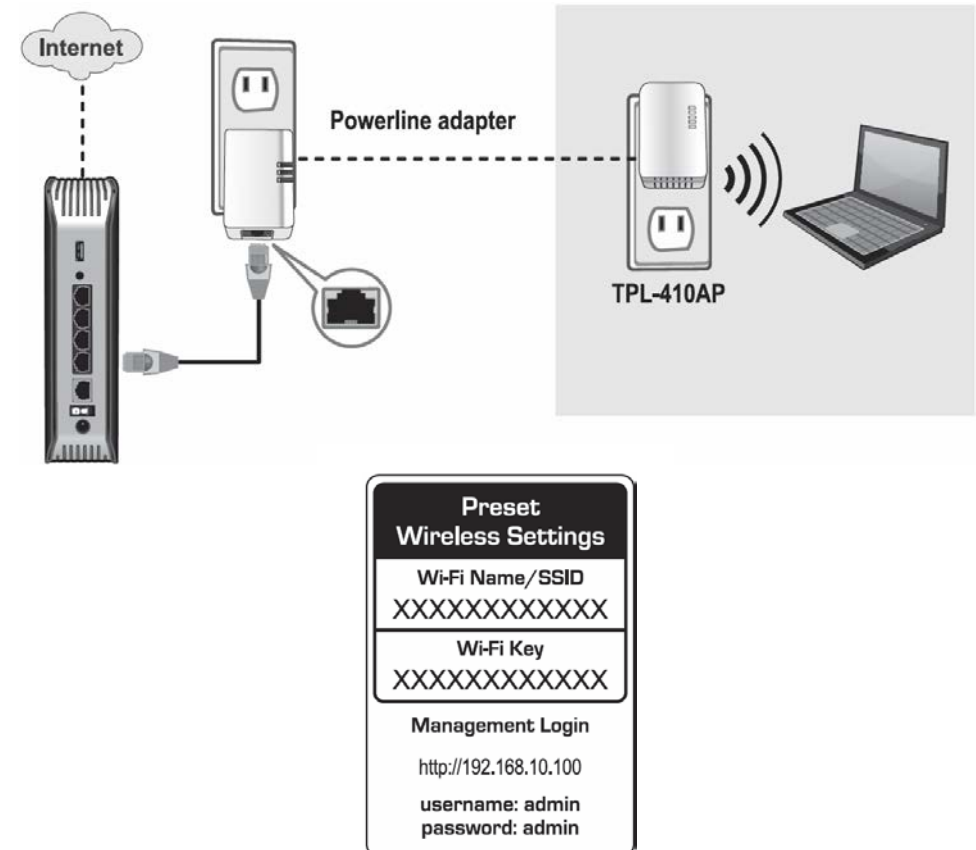
Connect additional wired devices to your network

Connect one of the available LAN ports labeled 1 & 2, on the access point to your router using an Ethernet cable. You can connect additional computers or other network enabled devices to your network by using Ethernet cables to connect them to your access point. Check the status of the LED indicators (1, 2) on the front panel of your access point to ensure the physical cable connection from your router and your computers or devices.

Note: If you encounter issues connecting to your network, there may be a problem with your computer or device network settings. Please ensure that your computer or device network settings (also called TCP/IP settings) are configured to obtain IP address settings automatically (also called dynamic IP address or DHCP) and to Obtain DNS Server address settings automatically.
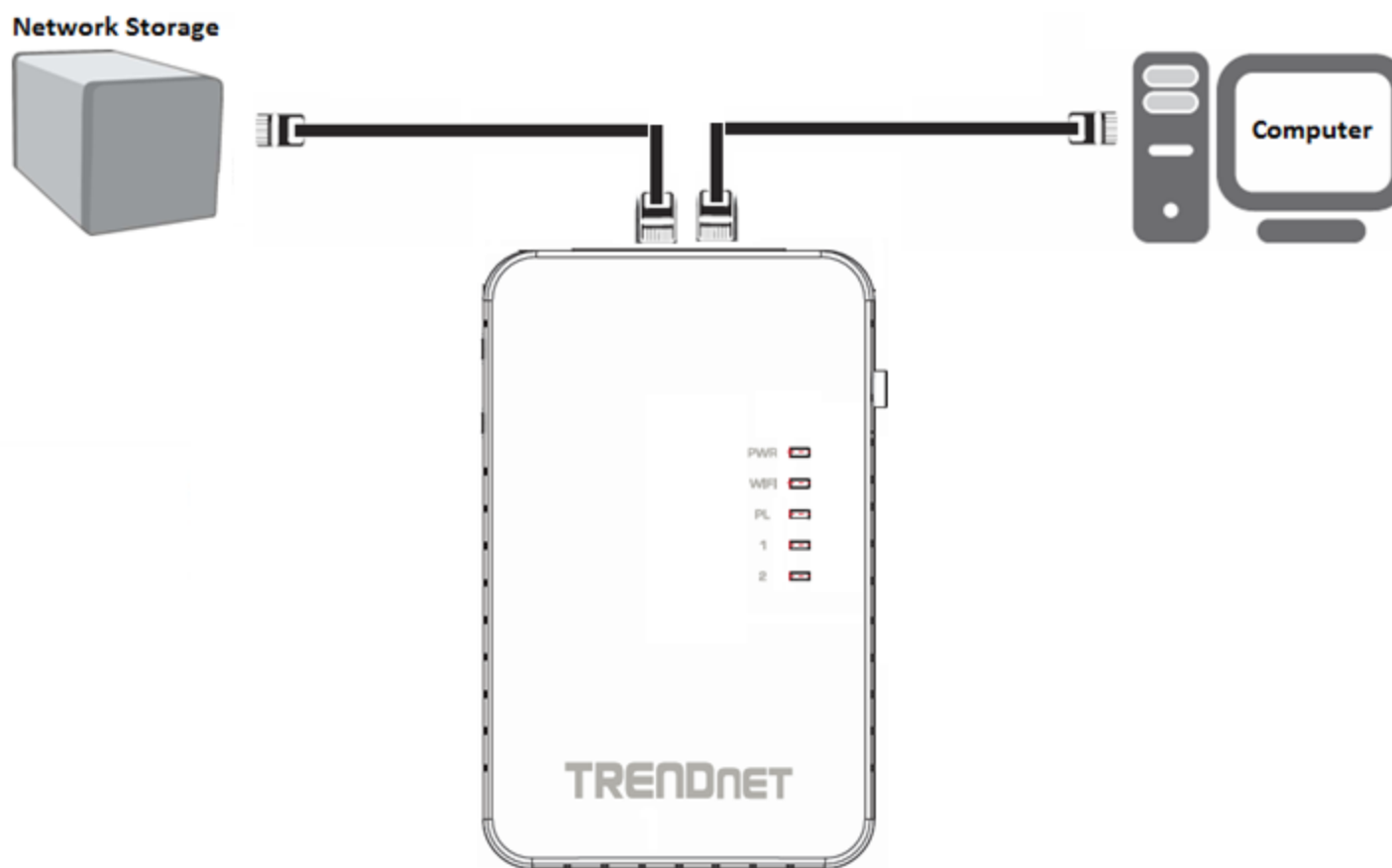
Configure your Wireless Access Point

Access your access point management page

Note: Your access point management page default IP address http://192.168.10.100 is accessed through the use of your Internet web browser (e.g. Internet Explorer®, Firefox®, Chrome™, Safari®, Opera™) and will be referenced frequently in this User's Guide.

If you have changed the default IP address, you will need to ensure that your computer is configured with IP address settings in the same subnet as the as the access point in order to access the access point management page. (Ex. Access Point IP address changed to 192.168.0.100 / 255.255.255.0, example computer address 192.168.0.25 / 255.255.255.0).

1. Plug the wireless access point into an available wall power outlet within reach of your computer's network cable.

2. Connect a network cable from your wireless access point network port into your computer's network port.
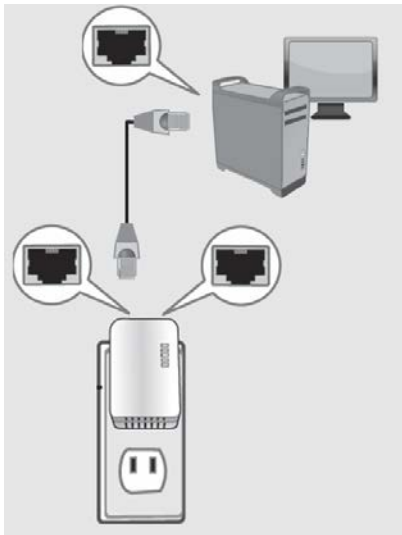
3. Assign a static IP address to your computer's network adapter in the subnet of 192.168.10.x (ex. 192.168.10.25) and a subnet mask of 255.255.255.0. (Please refer to the Appendix on page 55 on how to assign static IP address to your computer)

4. Open your web browser and go to IP address http://192.168.10.100. Your access point will prompt you for a user name and password.
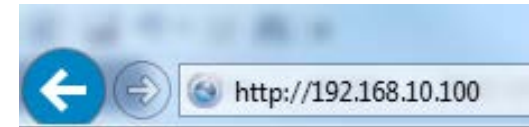
5. By default, the user name is *admin* and password is *admin*. You can also find the **Password** on a sticker on the side of the access point and on the label on the back of the access point. Enter your **Username** and **Password**, select your preferred language, then click **Login**.

Note: If you have changed the password already such as in the Setup Wizard, you will need to login using the new password.
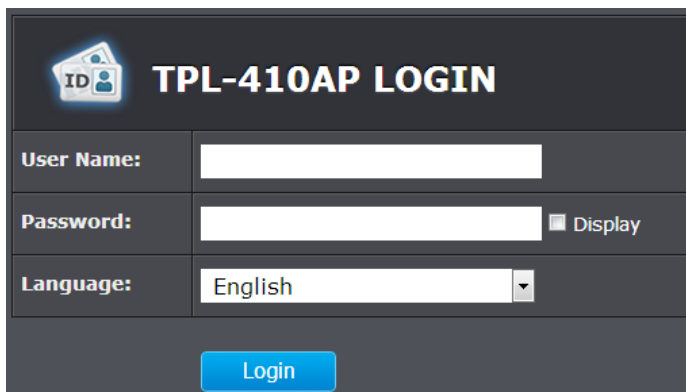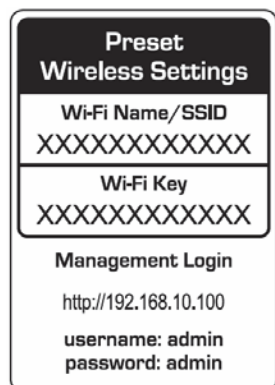
Default User Name: **admin**
Default Password: **admin**
Note: User Name and Password are case sensitive.

Setup Wizard
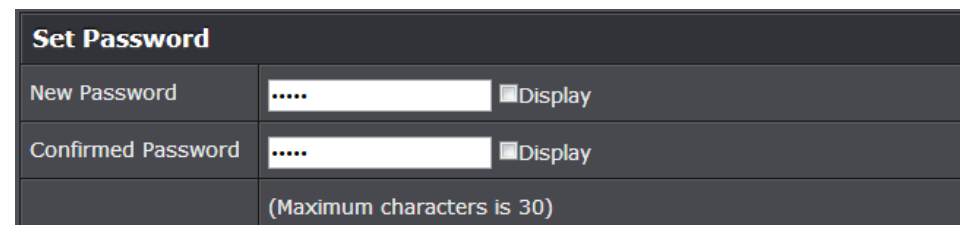
1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Enter a new password and verify the password by entering a second in in the "Confirmed Password" field. Click **Next**.

Note: *If this is the first time accessing the access point configuration, the wizard should automatically appear. If the wizard does not appear automatically, click Main and then*

click Wizard. For security purposes, you are required to change the admin password during the initial setup.

3. For added security, the Wi-Fi Name (SSID) and WiFi Key or encryption key have been preconfigured with unique settings. The wizard will list your preconfigured Wi-Fi settings in the confirmation window. You can also find these preconfigured settings on the "Preset Wireless Settings" sticker or on the device label on the back on the device. You will need to use this information to connect your wireless devices to your access point. To change the Wi-Fi key, please refer to the section Secure your Wireless Network on page 11. If the access point is reset to factory defaults, the Wi-Fi Key and Wi-Fi Name will reset to the preconfigured default settings.

Wireless Networking and Security

How to choose the type of security for your wireless network

Setting up wireless security is very important. Leaving your wireless network open and unsecure could expose your entire network and personal files to outsiders. TRENDnet recommends reading through this entire section and setting up wireless security on your new access point.

There are a few different wireless security types supported in wireless networking each having its own characteristics which may be more suitable for your wireless network taking into consideration compatibility, performance, as well as the security strength along with using older wireless networking hardware (also called legacy hardware).

It is strongly recommended to enable wireless security to prevent unwanted users from accessing your network and network resources (personal documents, media, etc.).

In general, it is recommended that you choose the security type with the highest strength and performance supported by the wireless computers and devices in your network. Please review the security types to determine which one you should use for your network.

Wireless Encryption Types

- **WEP:** Legacy encryption method supported by older 802.11b/g hardware. This is the oldest and least secure type of wireless encryption. It is generally not recommended to use this encryption standard, however if you have old 802.11 b or 802.11g wireless adapters or computers with old embedded wireless cards(wireless clients), you may have to set your access point to WEP to allow the old adapters to connect to the access point.
  Note: This encryption standard will limit connection speeds to 54Mbps.

- **WPA:** This encryption is significantly more robust than the WEP technology. Much of the older 802.11g hardware was been upgraded (with firmware/driver upgrades) to support this encryption standard. Total wireless speeds under this encryption type however are limited to 54Mbps.

  - **WPA-**Auto: This setting provides the access point with the ability to detect wireless devices using either WPA or WPA2 encryption. Your wireless network will automatically change the encryption setting based on the first wireless device connected. For example, if the first wireless client that connects to your wireless network uses WPA encryption your wireless network will use WPA encryption. Only when all wireless clients disconnect to the network and a wireless client with WPA2 encryption connects your wireless network will then change to WPA2 encryption.

Note: WPA2 encryption supports 802.11n speeds and WPA encryption will limit your connection speeds to 54Mbps

- **WPA2:** This is the most secure wireless encryption available today, similar to WPA encryption but more robust. This encryption standard also supports the highest connection speeds. TRENDnet recommends setting your access point to this encryption standard. If you find that one of your wireless network devices does not support WPA2 encryption, then set your access point to either WPA or WPA-Auto encryption.

Note: Check the specifications of your wireless network adapters and wireless appliances to verify the highest level of encryption supported. Below is brief comparison chart of the wireless security types and the recommended configuration depending on which type you choose for your wireless network.

| Security Standard	WEP	WPA	WPA2
Compatible Wireless Standards	IEEE 802.11b/g (802.11n devices will operate at 802.11g to connect using this standard)	IEEE 802.11b/g (802.11n devices will operate at 802.11g to connect using this standard)	IEEE 802.11b/g/n
Highest Performance Under This Setting	Up to 54Mbps	Up to 54Mbps	Up to 300Mbps
Encryption Strength	Low	Medium	High
Additional Options	Open System or Shared Key, HEX or ASCII, Different key sizes	TKIP or AES, Preshared Key or RADIUS	TKIP or AES, Preshared Key or RADIUS
Recommended Configuration	Open System ASCII 13 characters	TKIP Preshared Key 8-63 characters	AES Preshared Key 8-63 characters

*Dependent on the maximum 802.11n data rate supported by the device (150Mbps, 300Mbps)

Secure your wireless network

Wireless > Security

After you have determined which security type to use for your wireless network (see "How to choose the security type for your wireless network" on page 11), you can set up wireless security.

Note: By default, your access point is configured with a predefined wireless network name (SSID) and security key using WPA2-Personal. The predefined wireless network name and security can be found on the sticker on the side of the access point or on the device label at the bottom of the access point.
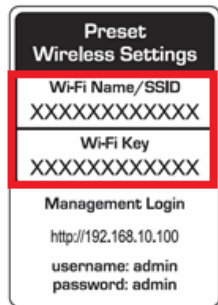
1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Click on **Wireless**, and click on **Security**.

3. Click on the **Security Mode** drop-down list to select your wireless security type.

Review the wireless security settings, click **Save** when finished. When prompted to *Save* or *Continue,* you can click **Save** to apply the changes or click **Continue** to additional changes in the access point management page before saving.

Selecting WEP:

If selecting **WEP** (Wired Equivalent Privacy), please review the WEP settings to configure and click **Save** to save the changes, then click **Save** again to commit the changes.

Note: Please note that you may receive an error message regarding WPS when attempting to set to WEP encryption. WPS will not work when using WEP security and must be disabled first under Wireless > Wi-Fi Protected Setup, before using WEP security. WPS will only work when using WPA2 encryption.

- **Mode:** Choose **Open, Shared**, or **Both.**
  Note: It is recommended to use Auto which includes both Open and Shared. Open is known to be more secure than Shared Key.
- **Primary Key:** Select the key index 1-4 to use.
  Note: Please note that the key index number also must match the setting on the wireless client devices you are connecting.
- **Key 1-4:** Next to the Key number you select for the Primary Key, enter the WEP key. This is the password or key that is used to connect your computer to this access point wirelessly. You can enter a 64-bit or 128-bit key.
  Note: It is recommended to use 128-bit because it is more secure to use a key that consists of more characters.

WEP Key Format	HEX	ASCII
Character set	0-9 & A-F, a-f only	Alphanumeric (a,b,C,?,*, /,1,2, etc.)
64-bit key length	10 characters	5 characters
128-bit key length	26 characters	13 characters

Selecting WPA/WPA2/Auto-Personal Shared Key (WPA2 AES recommended):

Note: Please note that WPS will only work when using WPA2 encryption. If using WPA encryption, you must disable WPS feature first under Wireless > Wi-Fi Protected Setup.

First, in the **Security Mode** drop-down list, select **WPA.**

In the **Type** drop-down list, select either **Personal Shared Key** or **Enterprise/RADIUS support**.

- **Personal Shared Key** – Create your own personal security key. (Recommended)
- **Enterprise** – Also called RADIUS (Remote Dial-In User Service). Requires an external RADIUS server to authenticate clients.

The following section outlines options when selecting **Personal Shared Key (WPA/WPA2/Auto)**

Then, in the **Mode** section, select WPA, WPA2, or Auto (WPA2 Recommended)
Finally, in the **Encryption** section, select TKIP, AES, or Auto.
  o When selecting **WPA** mode, it is recommended to use **TKIP** encryption.
  o When selecting **WPA2** mode, it is recommended to use **AES** encryption.
  o When selecting **Auto** mode, it is recommended to use **AES** encryption.

Create your WiFi Security Key (PSK)
- **PSK Key** – Enter the key or passphrase
- *Note: This is the key that is used to connect your computer and other wireless client devices to your router*
  Note: 8-63 alphanumeric characters (a,b,C,?,*,/,1,2, etc.)

Selecting WPA /WPA2/Auto-Enterprise/RADIUS Support:

The following section outlines options when selecting **WPA-Enterprise** (EAP or RADIUS). This security type is also known as EAP (Extensible Authentication Protocol) or Remote Authentication Dial-In User Service or RADIUS.

Note: This security type requires an external RADIUS server, Pre-Shared Key only requires you to create a passphrase.

- **RSN Preauth** – Enable this feature only if your external RADIUS server and wireless client support RSN (Robust Security Network) Pre-authentication used more commonly for wireless client roaming between multiple access points.
- **EAP Reauth Period** – Set the time in seconds when the wireless access point will request for re-authentication from the wireless client.
- **Server:** Enter the IP address of the RADIUS server. (e.g. *192.168.10.250)*
- **Port:** Enter the port your RADIUS server is configured to use for RADIUS authentication.
  Note: It is recommended to use port 1812 which is typical default RADIUS port.
- **Secret:** Enter the shared secret used to authorize your access point with your RADIUS server.

Connect wireless devices to your access point

A variety of wireless network devices can connect to your wireless network such as:

- Gaming Consoles

- Internet enabled TVs

- Network media players

- Smart Phones

- Wireless Laptop computers

- Wireless IP cameras

Each device may have its own software utility for searching and connecting to available wireless networks, therefore, you must refer to the User's Manual/Guide of your wireless client device to determine how to search and connect to this access point's wireless network.

See the "Appendix" on page 55 for general information on connecting to a wireless network.

Connect wireless devices using WPS

WPS (Wi-Fi Protected Setup) is a feature that makes it easy to connect devices to your wireless network. If your wireless devices support WPS, you can use this feature to easily add wireless devices to your network.

Note: You will not be able to use WPS if you set the SSID Broadcast setting to Disabled or if you are using WEP or WPA security. Please note that WPS functionality will only be available when using WPA2 security.

There are two methods the WPS feature can easily connect your wireless devices to your network.

- Push Button Configuration (PBC) method
  - (RECOMMENDED) Hardware Push Button method–with an external button located physically on your access point and on your client device
  - WPS Software/Virtual Push Button - located in access point management page
- PIN (Personal Identification Number) Method - located in access point management page
  Note: Refer to your wireless device documentation for details on the operation of WPS.

Recommended Hardware Push Button (PBC) Method

- *Note:* It is recommended that a wireless key (passphrase or password) is created before connecting clients using the PBC method. By default your access point is preconfigured with a wireless encryption key. If no wireless key is defined when connecting via PBC, the access point will automatically create an encryption key that is 64 characters long. This 64 character key will then have to be used if one has to connect computers to the access point using the traditional connection method.

To add a wireless device to your network, simply push the WPS button on the wireless device you are connecting (consult client device User's Guide for length of time), then push and hold the WPS button located on your access point for 3 seconds and release it. The PWR LED will blink to indicate WPS has been activated on your access point. (See "Product Hardware Features" on page 2)

For connecting additional WPS supported devices, repeat this process for each additional device.

PBC (Software/Virtual Push Button)

Wireless > Wi-Fi Protected Setup

In addition to the hardware push button located physically on your access point, the access point management page also has push button which is a software or virtual push button you can click to activate WPS on your access point.

1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Click on **Wireless**, and click on **Wi-Fi Protected Setup**.

3. To add a wireless device to your network, under the section *Add Wireless Device*, next to *Virtual Push Button*, click **Start PBC** in the access point management page.

5. Within 2 minutes, push the WPS button on the wireless device (consult wireless device's User's Guide for length of time) you are connecting. The wireless connection between the wireless client device and you r access point will automatically be established.

PIN (Personal Identification Number)

Wireless > Wi-Fi Protected Setup

If your wireless device has WPS PIN (typically an 8-digit code printed on the wireless device product label or located in the wireless device wireless software utility), you can use this method.

1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Click on **Wireless**, and click on **Wi-Fi Protected Setup**.

3. To add a wireless device to your network, under the section *Add Wireless Device*, next to *Client PIN*, enter the wireless device's 8-digit numeric PIN in the field and click **Start PIN** in the access point management page.

Note: You may need to initiate the WPS PIN on your wireless device first when using this method. Refer to your wireless device documentation for details on the operation of WPS.

5. Within 2 minutes, initiate the WPS PIN method on the wireless device (consult wireless device's User's Guide for how to initiate the WPS method) you are connecting. he wireless connection between the wireless client device and you r access point will automatically be established.

Basic Wireless Settings

Wireless > Basic

This section outlines available management options under basic wireless sub tab.

1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Click on **Wireless** and click on **Basic**.

3. Review the basic wireless settings and click **Save** when finished. When prompted to *Save* or *Continue,* you can click **Save** to apply the changes or click **Continue** to additional changes in the access point management page before saving.

- **Enable Wireless LAN Interface –** Check the option to enable the wireless network/band or uncheck to disable. ***Note:*** *It is recommended to leave this setting checked.*

- **Wireless Network Name (SSID):** Enter the wireless name (SSID) for your wireless network. This acronym stands for Service Set Identifier and is the name of your wireless network. It differentiates your wireless network from others around you. By default, the access point's wireless name is unique to the device. If you choose to change the SSID, change it to a name that you can easily remember.

- **Channel** – Selecting the **Auto** option will set your access point to scan for which wireless channel(s) to use automatically. Otherwise, you to manually set the channel on which the access point will broadcast. Click the drop-down list and select the desired Channel for wireless communication. The goal is to select the Channel that is least used by neighboring wireless networks.

When applying the **Mode** setting, please keep in mind the following:
- Wireless devices that support 802.11n are backwards compatible and can connect wirelessly at 802.11g or 802.11b.
- Connecting at 802.11b or 802.11g will limit the capability of your 802.11n supported wireless devices from obtaining higher performance and data rates.
- Allowing 802.11b or 802.11g devices to connect to an 802.11n capable wireless network may degrade the wireless network performance below the higher performance and data rates of 802.11n.
- Wireless devices that only support 802.11b or 802.11g will not be able to connect to a wireless network that is set to 802.11n only mode.
- Wireless devices that only support 802.11b will not be able to connect to a wireless network that is set to 802.11g only mode.

- **Channel Width:** Select the appropriate channel width for your wireless network. This setting only applies to 802.11n. For greater 802.11n performance, select **20/40MHz (Auto)** (Options: 20MHz or 20/40MHz (Auto)). It is recommended to use the default channel bandwidth settings.
  Note: *Please note that this setting may provide more stability than the higher channel bandwidth settings such as* 20/40MHz (Auto) *for connectivity in busy wireless environments where there are several wireless networks in the area.*
  - **HT20 MHz** – This mode operates using a single 20MHz channel for wireless devices connecting at 802.11n on both 2.4GHz and 5GHz. This setting may provide more stability than 20/40MHz (Auto) for

connectivity in busy wireless environments where there are several neighboring wireless networks in the area.

- **HT20/40MHz (Auto)** –When 20/40MHz (Auto) is active, this mode is capable of providing higher performance only if the wireless devices support the channel bandwidth settings. Enabling 20/40MHz (Auto) typically results in substantial performance increases when connecting an 802.11n client.

Channel Width	⦿ HT20 ○ HT20/40

- **Broadcast SSID**
  - **Enable -** Allows wireless devices to search and discover your wireless network name (also called SSID) broadcasted by your access point.
  - **Invisible -** Turns off the ability for wireless devices to find your network. It is still possible for wireless devices to be configured to connect to your wireless network. Disabling this setting will disable WPS functionality.

Broadcast SSID	⦿ Enable ○ Disable

Steps to improve wireless connectivity

There are a number of factors that can impact the range of wireless devices. Follow these tips to help improve your wireless connectivity:

1. Keep the number of obstructions to a minimum. Each obstruction can reduce the range of a wireless device. Position the wireless devices in a manner that will minimize the amount of obstructions between them.

   a. For the widest coverage area, install your access point near the center of your home, and near the ceiling, if possible.

   b. Avoid placing the access point on or near metal objects (such as file cabinets and metal furniture), reflective surfaces (such as glass or mirrors), and masonry walls.

   c. Any obstruction can weaken the wireless signal (even non-metallic objects), so the fewer obstructions between the access point and the wireless device, the better.

   d. Place the access point in a location away from other electronics, motors, and fluorescent lighting.

   e. Many environmental variables can affect the access point's performance, so if your wireless signal is weak, place the access point in several locations and test the signal strength to determine the ideal position.

2. Building materials can have a large impact on your wireless signal. In an indoor environment, try to position the wireless devices so that the signal passes through less dense material such as dry wall. Dense materials like metal, solid wood, glass or even furniture may block or degrade the signal.

3. Antenna orientation can also have a large impact on your wireless signal. Use the wireless adapter's site survey tool to determine the best antenna orientation for your wireless devices.

4. Interference from devices that produce RF (radio frequency) noise can also impact your signal. Position your wireless devices away from anything that generates RF noise, such as microwaves, radios and baby monitors.

If possible, upgrade wireless network interfaces (such as wireless cards in computers) from older wireless standards to 802.11n or 802.11ac. If a wirelessly networked device uses an older standard, the performance of the entire wireless network may be slower. If you are still experiencing low or no signal consider repositioning the wireless devices, installing additional access points or wireless extenders.

Advanced Wireless Settings

Wireless > Advanced

These settings are advanced options that can be configured to change advanced wireless broadcast specifications. It is recommended that these settings remain set to their default values unless you are knowledgeable about the effects of changing these values. Changing these settings incorrectly can degrade performance.

- **Gating Index:** Select the option that works best for your installation. It may be best to keep this option at its default setting.

    o **Half -** Using this setting can increase throughput. However, it can also increase error rate in some installations, due to increased sensitivity to radio-frequency reflections.

    o **Full –** Using this setting can help to decrease the error rate in wireless data transmission and receiving.

- **Aggregation:** This setting allows you to enable the aggregation feature to increase overall wireless throughput by sending more frames in a single wireless transmission and decreasing the frame overhead. Enabling this feature may increase performance, however, in busy wireless environments, this may decrease your overall performance as the percentage of data loss may increase in busy environment. It may be best to keep this option at its default setting.

    o **Enable –** Enables or turns on the aggregation feature.

    o **Disable –** Disables or turns off the aggregation feature.

- **Aggregation Frames:** Allows you to specify the maximum number of aggregation frames that can be sent in a single wireless transmission.

- **Aggregation Size:** Allows you to specify the maximum size of each aggregation frame (Bytes) to be sent in a single wireless transmission.

- **Aggregation Min Size:** Allows you to specify the minimum size of each aggregation frame to be sent in a single wireless transmission.

- **WMM:** Wi-Fi Multimedia is a Quality of Service (QoS) feature which prioritizes audio and video data packets. This feature requires the wireless device to also support WMM. Click **Enabled (recommended)** or **Disabled** to turn this feature on or off on your access point.

- **Coexistence:** If set to **Enable**, will not allow legacy devices such as 802.11b/g to connect wireless. This will ensure that access point will provide the best possible performance rate available. If set to **Disable**, will allow all wireless clients to connect including 802.11b/g.

Wireless Advanced Settings	
Gating Index	○ Half ⦿ Full
Aggregation	○ Enable ⦿ Disable
Aggregation Frames	32
Aggregation Size	50000
Aggration Min Size	32768
WMM	○ Disable ⦿ Enable
Coexistence	⦿ Disable ○ Enable

MAC Address Filters

Wireless > MAC Filters

Every network device has a unique, 12-digit MAC (Media Access Control) address. Using MAC filters, you can allow or deny specific computers and other devices from using this access point's wireless network.

1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Click on **Wireless** and click on **MAC Filters**.

3. Review the basic wireless settings and click **Save** when finished. When prompted to *Save* or *Continue*, you can click **Save** to apply the changes or click **Continue** to additional changes in the access point management page before saving.

First, click the **MAC Filter Policy** drop-down list to choose the MAC filter function, then click **Save**.

- **Disabled** – disables the MAC address filter.
- **Allow Listed MAC Addresses -** Only **Allow** computers/devices with MAC addresses listed to wirelessly connect to the access point. Deny all others.
- **Deny Listed MAC Addresses -** Only **Deny** computers/devices with MAC addresses listed to wirelessly connect to the access point. Allow all others.

  Note: MAC filter can be configured to allow access to the listed MAC address and deny all others unlisted or vice versa. The recommended function is to choose to only allow access to the MAC addresses listed and deny all others unlisted because it is easier to determine the MAC addresses of devices in your network then to determine which MAC addresses you do not want to allow access.

Add the MAC addresses to the MAC Address List first. Click **Save** to add each entry to the MAC Address List.

- **MAC Address –** Check the box next to the entry to enable and in the empty field, enter the MAC address of the devices you would like to filter.

  (e.g. 00:11:22:AA:BB:CC)

- **Comment** – Enter a short description of the MAC address to help you to easily identify it.

*Note: If you wireless clients are currently connected, you can check **Status > Wireless** to find the MAC address. If you device is not listed, please refer to your computer or device documentation to find the MAC address.*

In the MAC Address List, you can click **Delete All** to delete all MAC addresses in the list or select the specific MAC address entry under the *Select* column and click **Delete** to delete a specific entry.

Change your access point login username and password

Administration > Password

1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Click on **Administration**, and click on **Password**.

3. In the **User Name** field, enter the new user name and in the **Password** field, enter the new password. Then enter the password again in the **Confirmed Password** field to verify.

Password		
User Name	admin	
New Password	••••••••	☐Display
Confirmed Password	••••••••	☐Display
	(Maximum characters is 30)	

3. To save changes, click **Save**. When prompted to *Save* or *Continue,* you can click **Save** to apply the changes or click **Continue** to additional changes in the access point management page before saving.

Setting Saved

Your changes have been saved. The device must be rebooted for the changes to take effect.You can reboot now, or you can continue to make other changes and reboot later.

[Save]   [Continue]

Note: If you change the access point login password, you will need to access the access point management page using the User Name "admin" and the new password.

Set your access point date and time

Administration> Time Settings

1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Click on **Administration**, and click on **Time Settings**.

3. Review the Time settings. Click **Save** to save settings. When prompted to *Save* or *Continue,* you can click **Save** to apply the changes or click **Continue** to additional changes in the access point management page before saving.

- **Current Time:** Displays the current device time and date information. You can click **Sync with host** to force the device to check for updated date and time information with the NTP server configured in the NTP server setting.

Current Time	Wed Dec 31 19:34:27 GMT 1969	Sync with host

- **Location (Time Zone) –** Click the drop-down list and select your time zone.

Location	(GMT-08:00) Pacific Time	▾

- **NTP Server –** Your access point will update the date and time settings by synchronizing with an NTP (Network Time Protocol) server address (e.g. pool.ntp.org). Enter the NTP server address next to Default NTP server, (e.g. pool.ntp.org).
  Note: NTP servers are used for computers and other network devices to synchronize time across an entire network.

NTP Server	us.pool.ntp.org

- **NTP Sync Cycle –** You can set the interval in hours when you access point will synchronize with the NTP server.

NTP Sync Cycle	1	(Hour)

Change your access point IP address

Main > Network Settings

Typically, the access point IP address settings only needs to be changed when connecting the access point to your network and configuring to the device to be in the same IP network as your existing network.

Default Access Point IP Address Settings: 192.168.10.100 / 255.255.255.0

1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Click on **Main**, and click on **Network Settings**.

3. Under **LAN Interface Setup**, review the settings.

- **Dynamic IP :** Check this option to set the access point to automatically obtain IP address settings from a DHCP server .
  Note: *Typically, your network router has a built-in DHCP server.*
- **Static IP:** Uncheck the *Dynamic IP* option to manually specify an IP address in the *IP Address, Subnet Mask, and Default Gateway* fields.
  - **IP Address:** Enter the new access point IP address. (e.g. *192.168.0.100*)
  - **Subnet Mask:** Enter the new access point subnet mask. (e.g. *255.255.255.0*)
  - **Gateway Address:** Enter the default gateway address of your network. This parameter is required for the access point to access Internet for functions such as e-mail notifications.
    Note: *Typically, your network router IP address is used as the default gateway address to access the Internet e.g. 192.168.10.1)*
    Note: *Typically, your network IP address is used as the DNS server address.*

4. To save changes, click **Save**. When prompted to *Save* or *Continue,* you can click **Save** to apply the changes or click **Continue** to additional changes in the access point management page before saving.

Note: You will need to access your access point management page using your new access point IP address. (e.g. Instead of using the default http://192.168.10.100 your new access point IP address will use the following format using your new IP address http://(new.ipaddress.here) to access your access point management page.

Set up the DHCP server on your access point

Main > DHCP Server

Your access point can be used as a DHCP (Dynamic Host Configuration Protocol) server to automatically assign an IP address to each computer or device on your network. The DHCP server is disabled by default on your access point. In most cases your network router has a built-in DHCP server that is typically enabled and used as your network DHCP server. If you already have a DHCP server on your network, leave this settings disabled.

1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Click on **Main**, and click on **DHCP Server**.

3. Review the DHCP Server settings. Click **Save Settings** to save settings.

- **Enable:** Check to enable or uncheck to disable the DHCP server.
- **IP Pool Starting Address –** Enter the starting IP address for the DHCP server range. (e.g. *192.168.10.200)*
- **Pool Size** – Enter the maximum number of address the DHCP server is able to distribute. (e.g. *50, the DHCP server will issue 192.168.10.200-250*)
  Note: *The Start IP and End IP specify the range of IP addresses to automatically assign to computers or devices on your network.*
- **Release Time** – Enter the DHCP lease time in seconds.
  Note: *The DHCP lease time is the amount of time a computer or device can keep an IP address assigned by the DHCP server. When the lease time expires, the computer or device will renew the IP address lease with the DHCP server, otherwise, if there is no attempt to renew the lease, the DHCP server will reallocate the IP address to be assigned to another computer or device.*

DHCP Setup

Enable	☐
IP Pool Starting Address	192.168.10.200
Pool Size	50 (1-254)
Release Time	86400

4. To save changes, click **Save**. When prompted to *Save* or *Continue,* you can click **Save** to apply the changes or click **Continue** to additional changes in the access point management page before saving.

Setting Saved

Your changes have been saved. The device must be rebooted for the changes to take effect. You can reboot now, or you can continue to make other changes and reboot later.

[Save]   [Continue]

Access Point Maintenance & Monitoring

Reset your Access Point to factory defaults

Administration > Reset

You may want to reset your access point to factory defaults if you are encountering difficulties with your access point and have attempted all other troubleshooting. Before you reset your access point to defaults, if possible, you should backup your access point configuration first, see "Backup and restore your access point configuration settings" on page 25.

There are two methods that can be used to reset your access point to factory defaults.

- **Reset Button** – Located on the left side of your access point, see "Product Hardware Features" on page 2. Use this method if you are encountering difficulties with accessing your access point management page.

  OR

- **Access Point Management Page**

1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Click on **Administration** and click on **Reset**.

3. Click the **Reset** button to reset your access point to factory defaults.
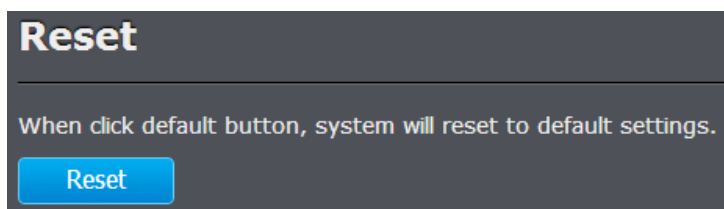
Access Point Default Settings

Administrator User Name	admin
Administrator Password	admin
Access Point IP Address	192.168.10.100
Access Point Subnet Mask	255.255.255.0
Wireless Interface	Enabled
Wireless Network Name/Encryption (WPA2-PSK AES)	Please refer to sticker or device label
Powerline Encryption Key	HomePlugAV

Backup and restore your access point configuration settings

Administration > Backup/Restore

You may have added many customized settings to your access point and in the case that you need to reset your access point to default, all your customized settings would be lost and would require you to manually reconfigure all of your access point settings instead of simply restoring from a backed up access point configuration file.

To backup your access point configuration:

1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Click on **Administration** and click on **Backup/Restore**.

3. Next to **Save Settings to Local Hard Drive** section, click **Save Configuration**.

Save Settings to Local Hard Drive	Save Configuration

4. Depending on your web browser settings, you may be prompted to save a file (specify the location) or the file may be downloaded automatically to the web browser settings default download folder. (Default Filename: *tpl410cfg(#).dat)*

To restore your access point configuration:

1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Click on **Administration** and click on **Backup/Restore**.

3. Next to **Load Settings From Local Hard Drive,** depending on your web browser, click on **Browse** or **Choose File**.

Local Settings From Local Hard Drive	Browse...

4. A separate file navigation window should open.

5. Select the access point configuration file to restore and click **Restore**. (Default Filename: *tpl410cfg(#).dat*). If prompted, click **Yes** or **OK**. Wait for the access point to restore settings.

Restore Configuration From File	Restore

Reboot your access point

Administration >Restart

You may want to restart your access point if you are encountering difficulties with your access point and have attempted all other troubleshooting.

There are two methods that can be used to restart your access point.

- **Turn the access point off** for 10 seconds using the access point On/Off switch located on the right side of your access point or unplugging the device from the power source, see "Product Hardware Features" on page 2. Then turn the device back on either using the On/Off switch or plugging the device back into the power source.
  Use this method if you are encountering difficulties with accessing your access point management page. This is also known as a hard reboot or power cycle.
  OR
- **Access Point Management Page** – This is also known as a soft reboot or restart.

1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Click on **Administration** and click on **Restart**.

3. Click **Restart**. Wait for the device to reboot.

Reboot

Click the restart button to reboot the device.

Restart

Upgrade your access point firmware

Administration > Firmware

TRENDnet may periodically release firmware upgrades that may add features or fix problems associated with your TRENDnet access point model and version. To check if there is a firmware upgrade available for your device, please check your TRENDnet model and version using the link. http://www.trendnet.com/downloads/

In addition, it is also important to verify if the latest firmware version is newer than the one your access point is currently running. To identify the firmware that is currently loaded on your access point, log in to the access point, click on the Administrator section and then on the Status. The firmware used by the access point is listed at the top of this page. If there is a newer version available, also review the release notes to check if there were any new features you may want or if any problems were fixed that you may have been experiencing.

Note: When upgrading through the access point management page of the TPL-410AP, both wireless access point and powerline firmware functionality can be updated using the firmware .bin file. This is the recommended method. If you would like to upgrade the powerline firmware only, you can upgrade the powerline functionality using the Powerline Utility. If you have the TPL-410APK which includes the TPL-406E adapter, the powerline firmware can only be updated using the Powerline Utility.

1. If a firmware upgrade is available, download the firmware to your computer.

2. Unzip the file to a folder on your computer.

   Please note the following:
   - Do not interrupt the firmware upgrade process. Do not turn off the device or press the Reset button during the upgrade.
   - If you are upgrade the firmware using a laptop computer, ensure that the laptop is connected to a power source or ensure that the battery is fully charged.
   - Disable sleep mode on your computer as this may interrupt the firmware upgrade process.
   - Do not upgrade the firmware using a wireless connection, only using a wired network connection.
   - Any interruptions during the firmware upgrade process may permanently damage your access point.

1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Click on **Administration** and click on **Firmware**.

3. Depending on your web browser, next to **Select File**, click **Browse** or **Choose File**.
Note: In addition, this page displays the access point current firmware version and build date.

4. Navigate to the folder on your computer where the unzipped firmware file (*.bin*) is located and select it.

5. Click **Upload**. If prompted, click **Yes** or **OK**.

Check the access point system information

Status > Information

You may want to check the system information of your access point such as IP address settings, access point mode, wireless and wired network settings, access point wireless MAC addresses, and firmware version.

1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Click on **Status** and click on **Information**.

System Information

- **Firmware Version** – The current firmware version your access point is running.
- **Build Day** - The build day and time of the current firmware version your access point is running.
- **System Up Time** – The duration your access point has been running continuously without a restart/power cycle (hard or soft reboot) or reset.

General	
Firmware Version	v1.10
Build Day	Tue Dec 17 18:59:22 CST 2013
System Up Time	0:3:36:37

Powerline Interface

- **MAC Address:** The MAC address of your access point's powerline interface configuration.

Powerline Interface	
MAC Address	EC:F0:0E:13:45:A7

Ethernet Information

- **IP Address** – The current IP address settings assigned to your access point.
- **Subnet Mask** - The current subnet mask assigned to your access point.
- **Default Gateway** – The current gateway assigned to your access point.
- **MAC Address:** Displays the current Ethernet wired interface MAC address.

Ethernet	
IP Address	192.168.10.100
Subnet Mask	255.255.255.0
Default Gateway	192.168.10.100
MAC Address	EC:F0:0E:13:45:A4

Wireless LAN

- **Wireless OP Mode:** Displays the current wireless mode.
- **Name (SSID):** Displays the current wireless network name assigned to your access point.
- **Channel** – Displays the current wireless channel your access point is operating.
- **Security Mode:** Displays the wireless security type applied.
- **MAC Address:** The MAC address of your access point's wireless LAN or interface configuration.

Wireless LAN	
WLAN OP Mode	Access Point
Name(SSID)	TRENDnet410_2.4GHz_9AFC
Channel	Auto
Security Mode	WPA
MAC Address	EC:F0:0E:13:45:A6

Wireless Client List

Status > Wireless

You can view the list of active wireless devices currently connected to your access point.

1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Click on **Status**, and click on **Wireless.** You can also click **Refresh** to refresh the status.
   - **Address:** Displays the MAC address of your wireless client.
   - **Channel:** Displays the current channel that the wireless client is connectioned.
   - **RSSI:** Displays the signal strength of your wireless client.
   - **Rate:** Displays the current rate your wireless client has established.

Associated Wireless Client List			
Address	Channel	RSSI	Rate
d8:eb:97:23:5c:39	1	51	72M

Powerline Device List

Status > Wireless

You can view the list of active powerline devices currently connected to your access point.

1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Click on **Status**, and click on **Powerline.**
   - **Tx Rate:** Displays the transmission rate your powerline device has established.
   - **Rx Rate:** Displays the receive rate your powerline device has established.

Powerline Link Status		
Remote Device	Tx Rate (Mbps)	Rx Rate (Mbps)
00:14:D1:A3:85:37	358	323

View your access point log

Status > System Log

Your access point log can be used to obtain activity information on the functionality of your access point or for troubleshooting purposes.

1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Click on **Status**, and click on **System Log**.

Note: *Log messages display the date, time, type, and additional information for each entry.*

```
1969-12-31 22:52:29 [Informational] hostapd: ath0: STA d8:eb:97:23:5c:39 IEEE 80:
1969-12-31 22:52:29 [Informational] hostapd: ath0: STA d8:eb:97:23:5c:39 IEEE 80:
```

Installing your Powerline Adapters

Before you Install

1. Before you proceed with the installation, verify the following:

- You already have a router already installed.
- You already have Internet access through your existing network.
- An Ethernet port (also called LAN port) is available on your router.
- Verify that you have at least two Powerline adapters. You will need at least two Powerline adapters to create a Powerline network.

  Note: The TPL-410AP package only includes a single Powerline adapter. The TPL-410APK package includes TPL-406E and TPL-410AP to create your Powerline network. Please ensure that your other Powerline adapter is HomePlug® AV or IEEE 1901 compliant (e.g. TRENDnet models TPL-303E, TPL-304E, TPL-305E, TPL-306E, TPL-307E, TPL-308E, TPL-310AP, TPL-401E, TPL-402E, TPL-405E,TPL-4052E, TPL-406E, TPL-407E, TPL-408E, TPL-420E, or another TPL-410AP.)

2. Plan the location of where you will install your Powerline adapters.

- Avoid plugging the adapters into power strips, extension cords, or surge protectors as this may prevent the adapter from functioning correctly or degrade performance.
- Avoid plugging the adapters into wall power outlets that are controlled by a light switch to prevent the Powerline adapter from being turned off accidentally.
- Avoid plugging the adapters into wall power outlets that are located near appliances that consume a lot of power (e.g. refrigerators, washers, dryers) as this may degrade performance.
- Make sure there is an available wall power outlet in the room where the router is installed and also near the router.
- Make sure there is an available wall power outlet in the room where you want to extend network connectivity.
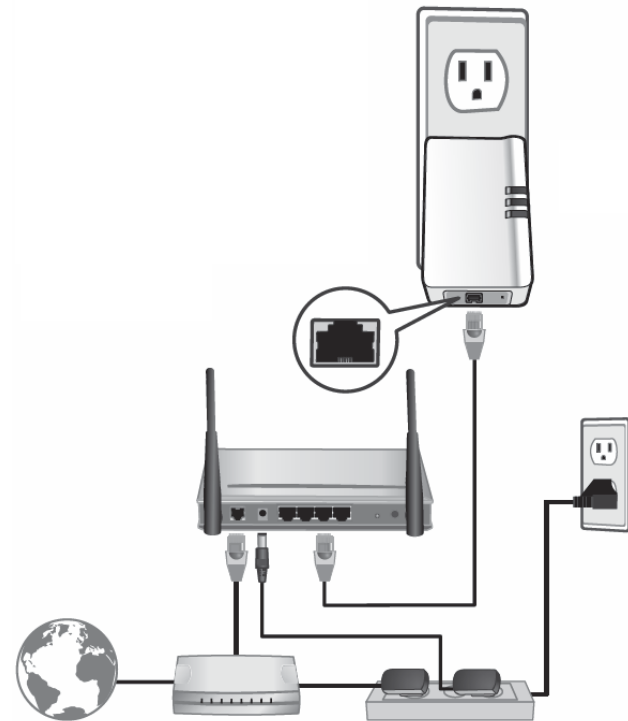
Connect a Powerline adapter to your router

1. Plug the Powerline adapter into an available wall power outlet near your router.

Note: This will allow devices connected to your Powerline network to access the Internet and other devices connected to your network.

2. Connect the included Ethernet cable (also called network cable) from the Ethernet port (also called network port) of your Powerline adapter to an available Ethernet port (also called LAN port) on your router.

3. Once the Powerline adapter is installed and connected to your router, verify that the **Power (PWR) LED** is on or blinking and the **Ethernet Connection (ETH) LED** (or if multiple ports LEDs 1,2,3,etc.) is on or blinking.

Add adapters to your network

Once you have installed and connected the first Powerline adapter to your router, you can easily extend your network to other rooms by adding additional Powerline adapters.

To extend your network using an additional Powerline adapter:

1. First, make sure the first Powerline adapter is installed and connected to your router.
Note: This will allow devices connected to your Powerline network to access the Internet and other devices connected to your network. See "Connect a Powerline adapter to your router" on .

2. Plug the additional Powerline adapter into an available wall power outlet in another room near a computer or network device (e.g. game consoles, network-enabled TVs, network attached storage, network media server/players, etc.) that you would like to connect to your network.

3. Connect the included Ethernet cable from the Ethernet port on your Powerline adapter to the to the Ethernet port of your computers or network devices.

4. After the additional Powerline adapter is connected and installed to your computer or network device, wait for the **Powerline (PL) LED** to turn on. After the **Powerline (PL) LED** turns on, verify that the **Power (PWR) LED** is on, the **Powerline (PL) LED** is on or blinking, and the **Ethernet Connection (ETH) LED** (or if multiple ports LEDs 1,2,3,etc.) is on or blinking.

Note: To verify that your Powerline adapters are connected successfully to your network, you can check if the computer(s) or network device(s) can access the Internet through your Powerline network.

To install additional Powerline adapters in other rooms, repeat the steps above for each adapter.
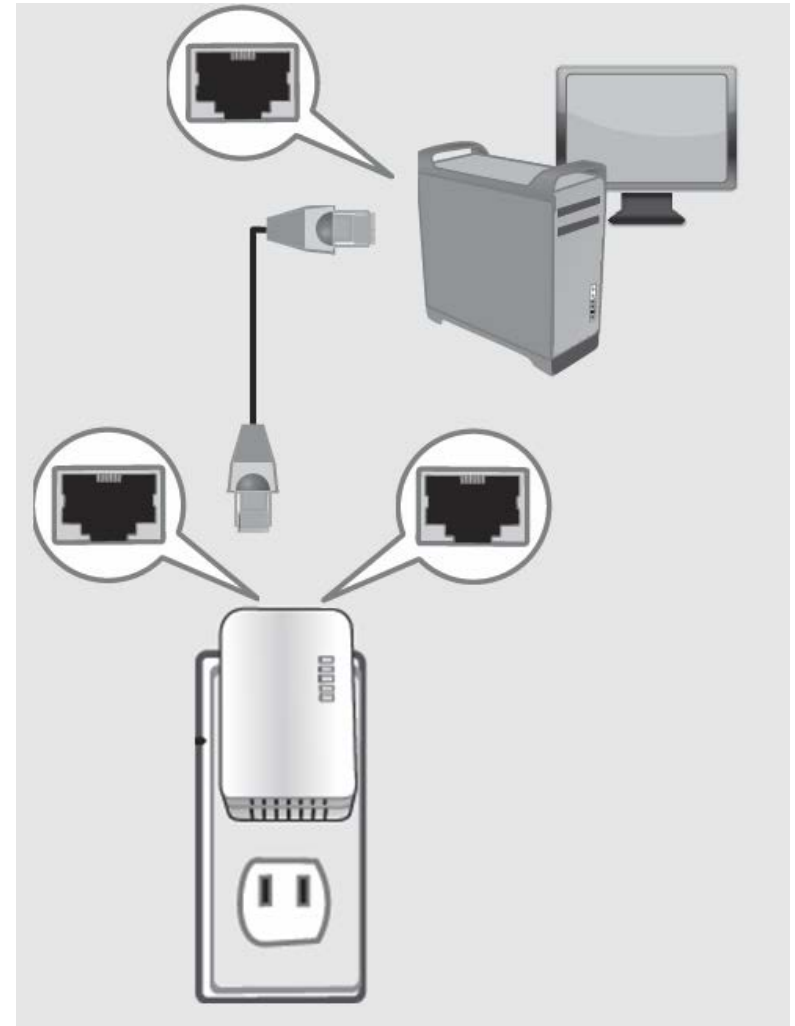
Securing your Powerline Network

Powerline networks consist of two or more Powerline devices connected together using the same encryption key. TRENDnet Powerline adapters automatically connect to each other over a secure encrypted signal and share the same encryption key (Default encryption key: HomePlugAV).

In order for your Powerline devices to connect to the same Powerline network, the same encryption key must be assigned to all Powerline devices in that network. Powerline devices that are not assigned the same encryption key will not be able to connect to the Powerline network.

For additional security, TRENDnet recommends changing adapter default encryption key to prevent a neighbor with a Powerline adapter and the same default encryption key from gaining access to your network.

Note: After the default encryption key has been changed and the Powerline adapters have been connected using a new encryption key, the Powerline adapters will retain their security settings when they are unplugged and moved to a new location. No additional reconfiguration of the Powerline adapters is needed after the default encryption has been changed.

There are two methods to change the default encryption key:

- Use the physical **Sync** button on your Powerline adapter to generate a random encryption key. See "Using the Sync Button" on page 31.
  ****Recommended method****

  OR

- Create a customized encryption key for your Powerline network using the included Powerline Utility. See "Using the Powerline Utility" on page 35.
  *****If users first use the Sync button method, the adapters will need to be reset to factory defaults in order to change setting using the Powerline Utility****
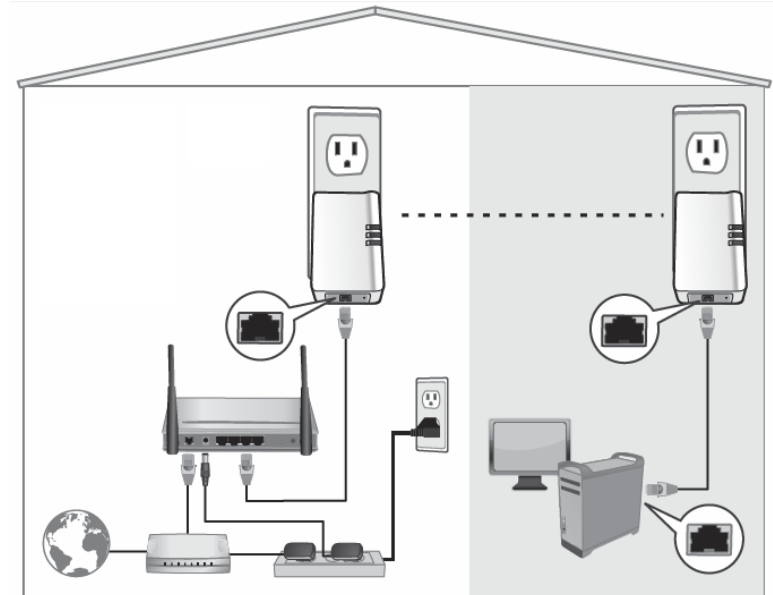
Using the Sync button

Change your default encryption key using the Sync button

The physical **Sync** button on the Powerline adapter provides an easy method of changing the default encryption key. The **Sync** button generates a random encryption key for your Powerline network. To create a customized encryption key, see "Using the Powerline Utility" on page 35.
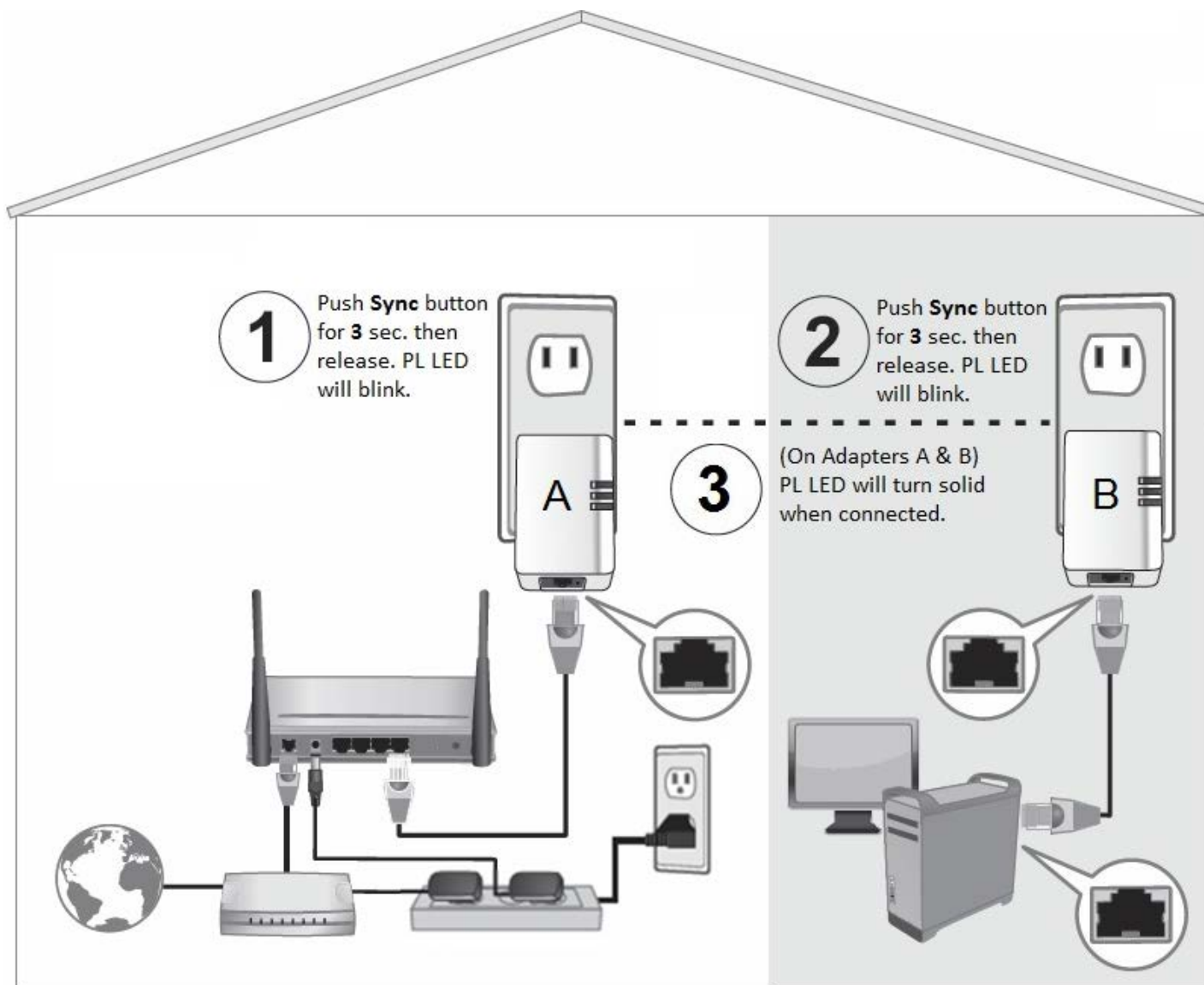
*Note: The default encryption key assigned to TRENDnet Powerline adapters is **HomePlugAV**. Before changing the default encryption, please ensure that your Powerline adapters are already installed and connected using the default encryption key.*

See "Installing your Powerline Adapters" on page 29.

Important Note: When using the Sync Button to change the default encryption key, it is highly recommended to plug the adapters into nearby outlets first and follow the Sync button procedure before installing the adapters in the desired locations.

The Sync button procedure below applies to the following TRENDnet models: **TPL-303E/304E/308E/4052E/406E/407E/410AP/408E/420E**

Note: The product images in the diagram below may not accurately illustrate your exact Powerline model. When pushing the Sync button, either the PWR or PL LED may blink to indicate that the Sync process has been activated.

Add adapters using the Sync button

If you have changed the default encryption key assigned to your adapters, additional adapters will not automatically connect to your Powerline network after they are plugged into a wall power outlet. For any additional adapters, you will need to use the **Sync** button to connect any additional adapters to use the same encryption key of your existing Powerline network.

Use the procedure (Adapter C) below to connect additional adapters. Repeat the procedure (Adapter C) below for each additional adapter you add to your network.

The Sync button procedure below applies to the following TRENDnet models: **TPL-303E/304E/308E/4052E/406E/407E/410AP/408E/420E**

Note: The product images in the diagram below may not accurately illustrate your exact Powerline model. When pushing the Sync button, either the PWR or PL LED may blink to indicate that the Sync process has been activated.
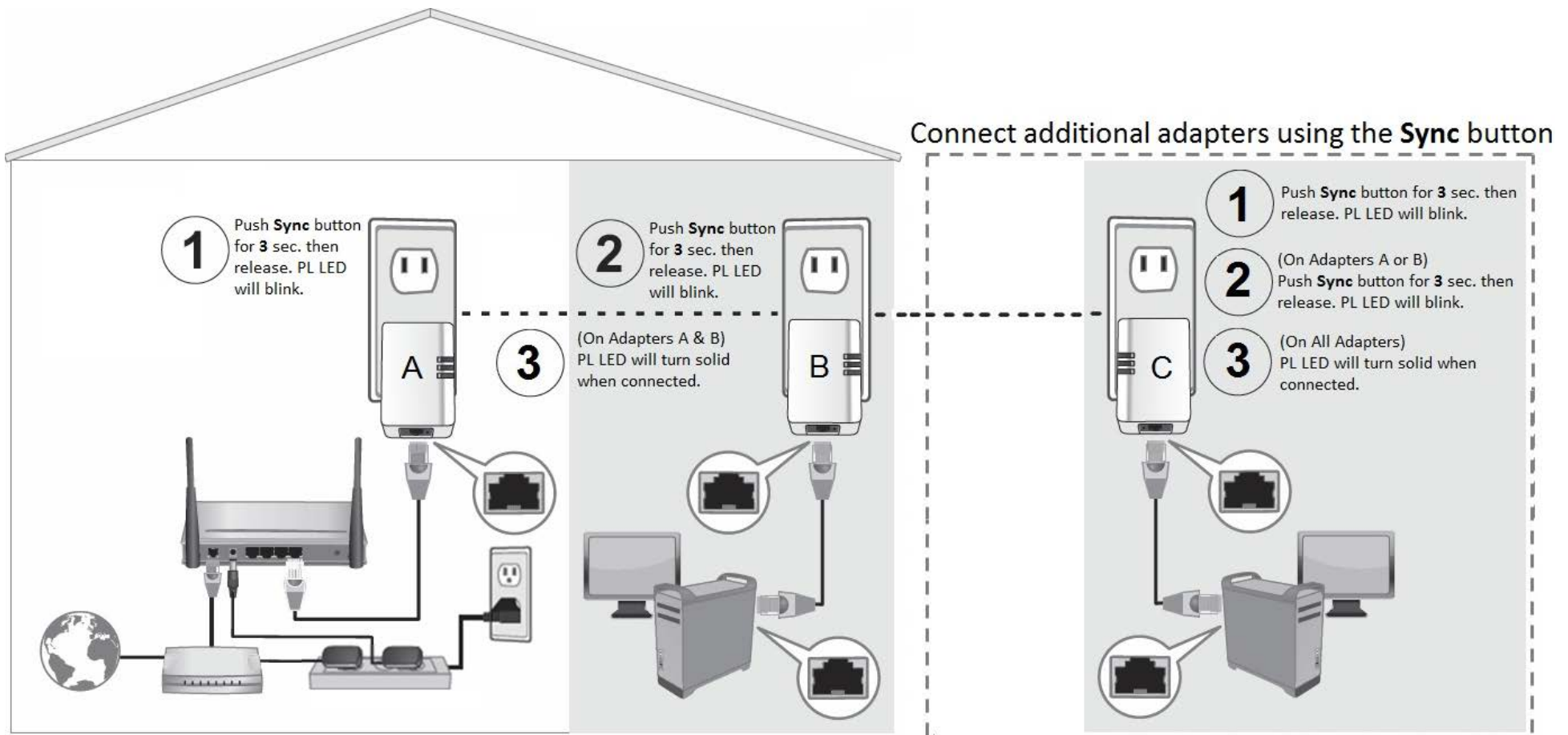
If adding a TRENDnet adapter models (Adapter C) not listed in the previous page, please follow the Alternative Sync button procedure below.

The Alternative Sync button procedure applies to the following TRENDnet Models: **TPL-305E/306E/307E/310AP/401E/402E/405E**

Use the procedure (Adapter C) below to connect additional adapters. Repeat the procedure (Adapter C) below for each additional adapter you add to your network.

Note: The product images in the diagram below may not accurately illustrate your exact Powerline model. When pushing the Sync button, either the PWR or PL LED may blink to indicate that the Sync process has been activated.
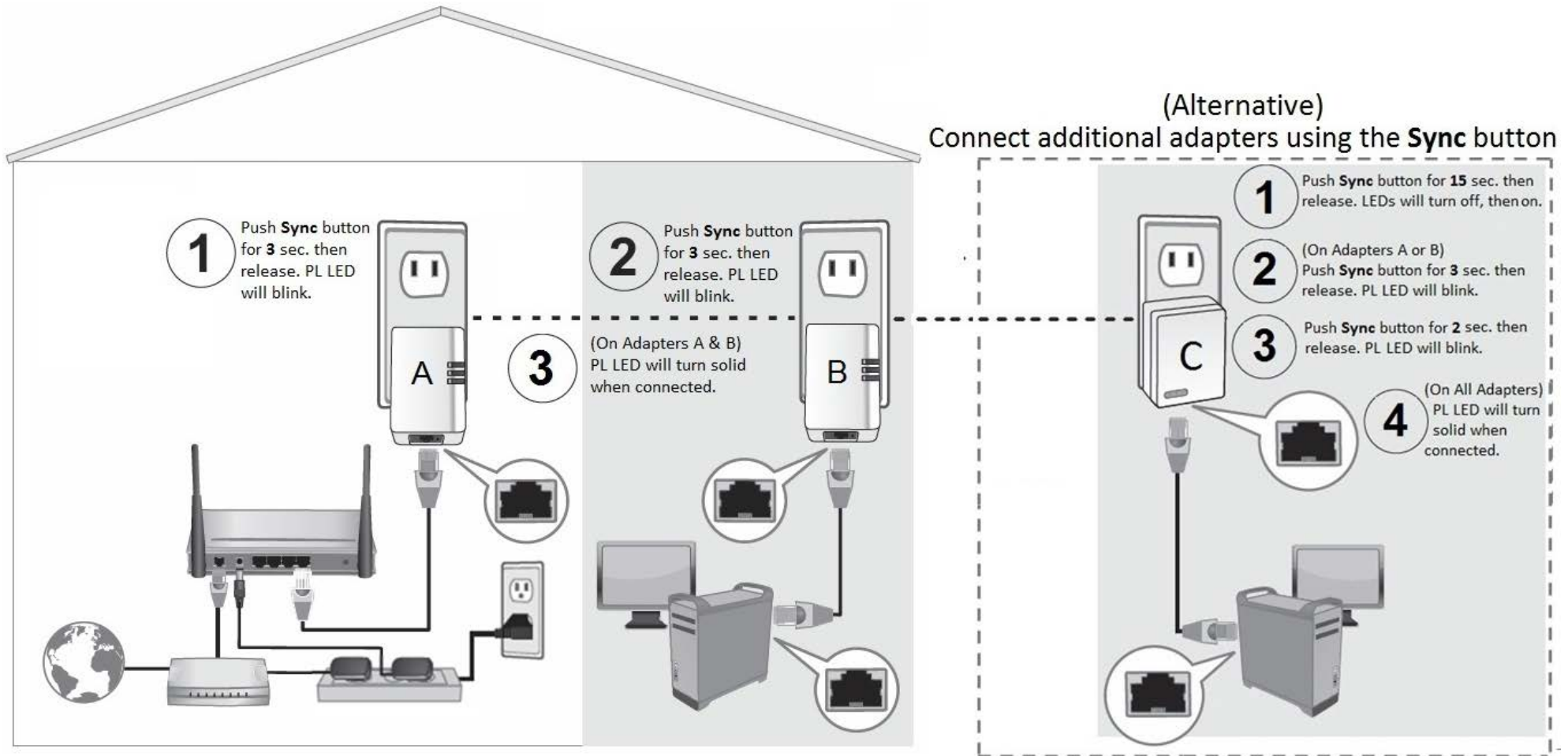
Powerline settings in access point management page

Powerline

You can also initiate the Sync process or assign a customized encryption key (instead of using Powerline Utility) using the access point management page. (Applies to TPL-410AP Access Point only)

To initiate the Sync process using the access point management page,

Powerline > Sync

1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Click on **Powerline**, and click on **Sync.**

3. Click the **Sync** button.

To assign a customized encryption key,

Powerline > Setup

Note: Please note that you must use the same customized encryption key for all other powerline devices in order to establish powerline connection.

1. Log into your access point management page (see "Access your access point management page" on page 9).

2. Click on **Powerline**, and click on **Setup.**

3. Under **Powerline Configuration**, enter your customized encryption key in the **Network Name/key** field.
Note: It is strongly recommended to keep the CCo mode at the default settings Auto.

4. To save changes, click **Save**. When prompted to *Save* or *Continue,* you can click **Save** to apply the changes or click **Continue** to additional changes in the access point management page before saving.

You can completely turn off or turn on the powerline functionality by clicking the **Turn Off** button or **Turn On** button.

Using the Powerline Utility

The Powerline Utility allows you to do the following:

- Create a customized encryption key for your Powerline network and apply it to multiple Powerline adapters at the same time.
- View the Powerline adapters connected to your network (using the MAC address) and the approximate connection quality and speed of each Powerline adapter.
- View and upgrade Powerline adapter firmware.

  Note: Link speed displayed in the utility of your Powerline adapters to another through your electrical system is estimated. Actual link speed may vary.

Before installing and using the utility, please ensure the following:

- *Write down the **Device Password (DPW)** (16-digit characters A-Z only) and **MAC Address** (12-digit characters a-f, A-F, 0-9) of each Powerline adapter as this will be required to change the encryption key for multiple Powerline adapters. See "Product Hardware Features" on page 2.*
- *Make sure your computer in which you are installing the utility is connected to your network and your Powerline adapters are also connected to your network.*
- *If you have changed your encryption key using the **Sync** button and you are creating a customized encryption key, it is required to reset all Powerline devices to factory defaults using the physical **Reset** button on your Powerline adapter first before using the utility. See "Product Hardware Features" on page 2.*
- *Please ensure that your Powerline adapters are already installed and connected and the Ethernet port on each adapter is connected to a device powered on.*

Powerline Utility System Requirements

- Windows® 8.1 (32/64-bit), 8 (32/64-bit), Windows 7 (32/64-bit), Vista (32/64-bit), or XP (32/64-bit)
- Microsoft® .NET Framework 2.0 installed (Included with CD installation) Software Installation

Software Installation

1. Insert the included CD-ROM into your computer's CD-ROM drive.

2. At the CD Autorun Prompt window, click *Run Autorun.exe* .

Note: *If the Autorun prompt does not appear automatically, open the CD contents and double-click Autorun.exe.*

3. At the CD-ROM main menu, click **Install Utility**.

4. You may receive the following prompt about WinPcap. Click **OK** to continue the installation.

Note: *The Powerline Configuration Utility requires the use of the WinPcap application. If you are prompted to install the WinPcap application, continue through the following steps to complete the installation. Otherwise, if you are not prompted to install WinPcap, reboot your computer to complete the installation.*
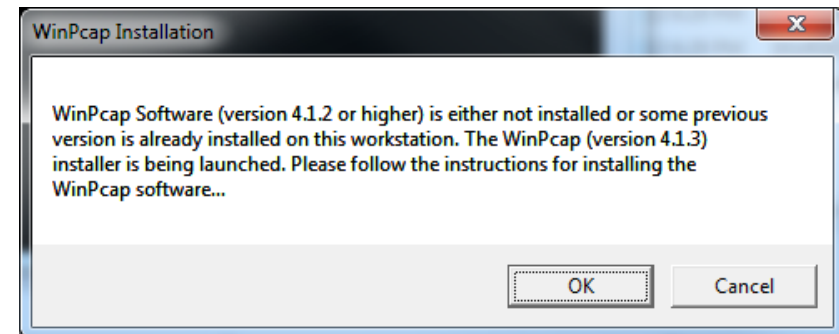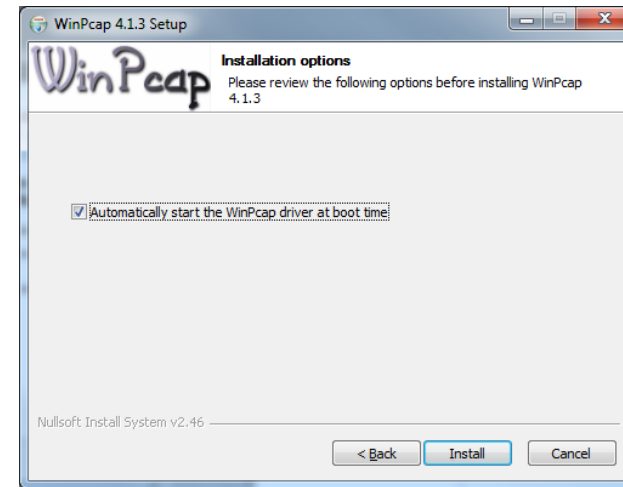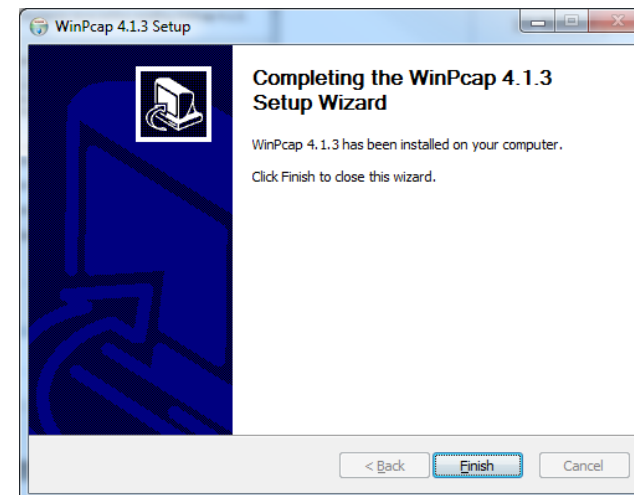
5. At the WinPcap installer window, click **Next**.

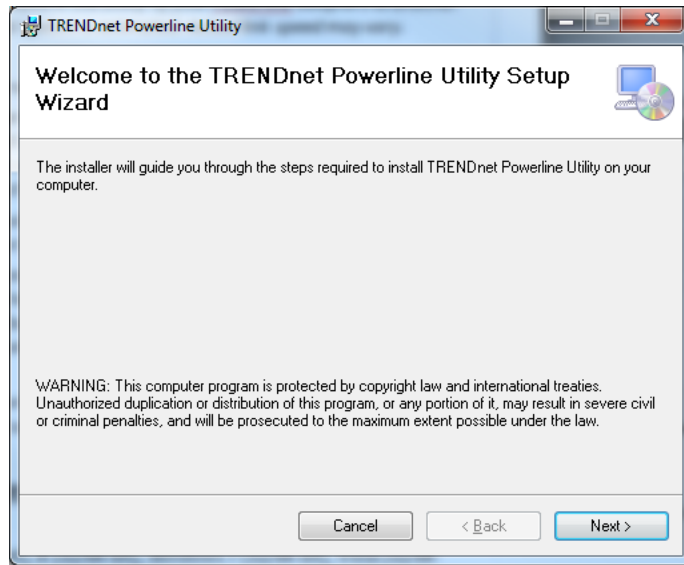6. In the License Agreement window, click **I Agree**.
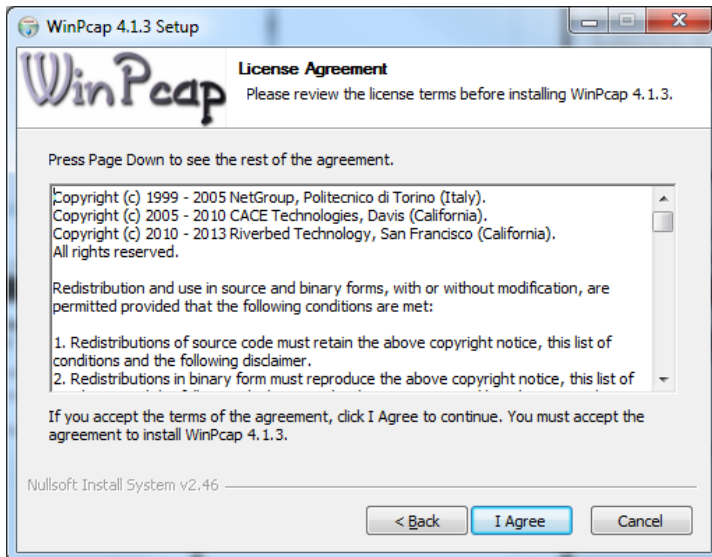
7. In the Install Options window, leave the option **Automatically start the WinPcap driver at boot time** checked and click **Install**. Wait for the installation to complete.
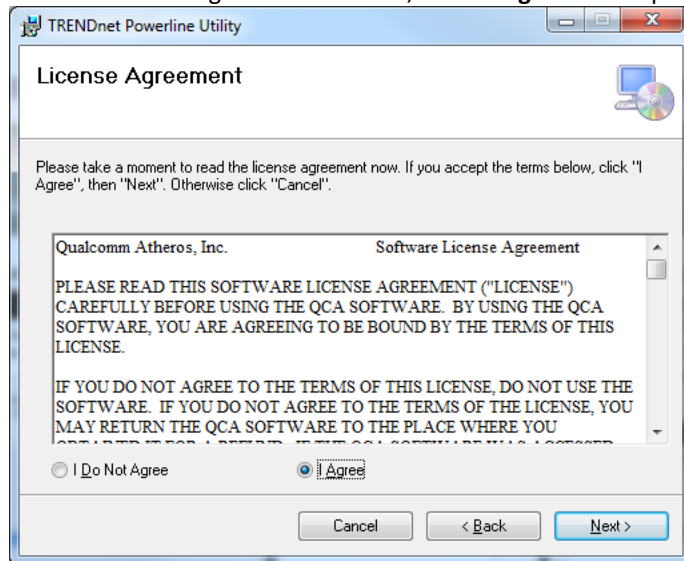

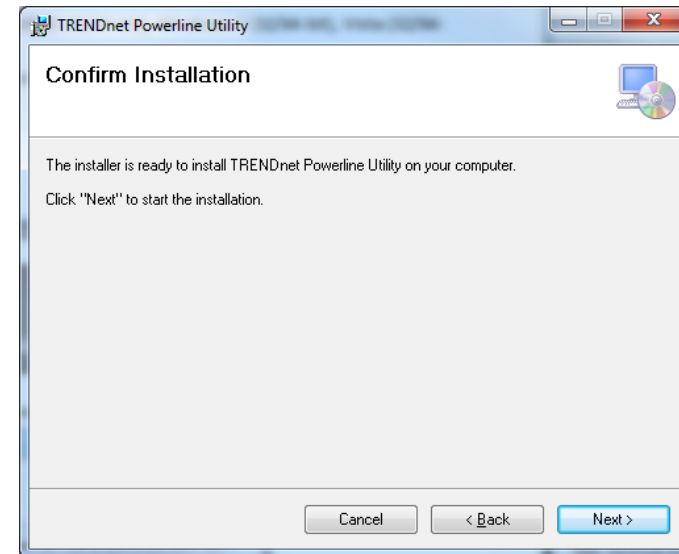7. After the process is completed, click **Finish.**

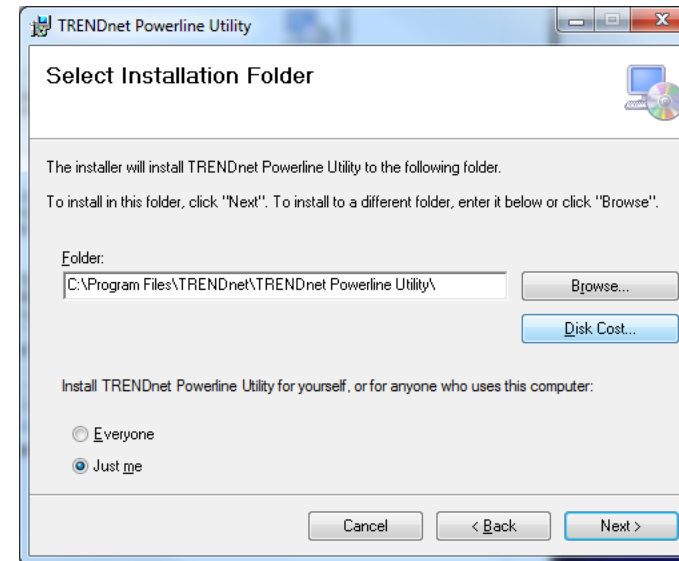8. At the Powerline Configuration Utility installation window, click **Next**.

9. At the License Agreement window, select **I Agree** to accept the terms and click **Next.**
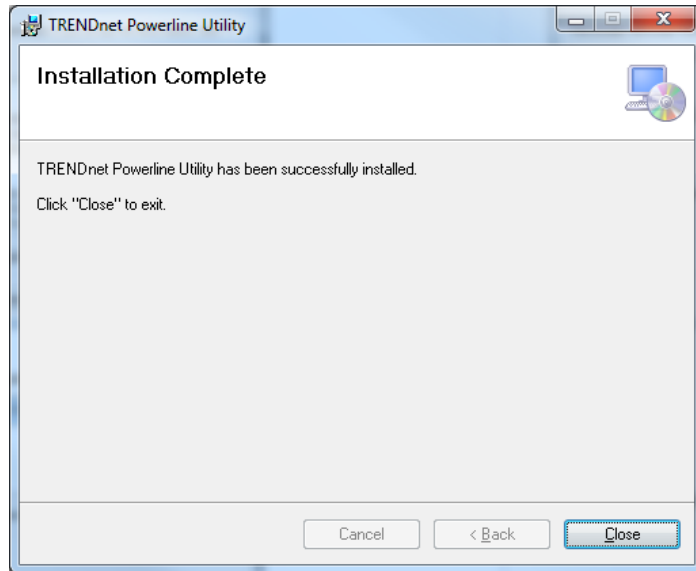

10. At the Confirm installation window, click **Next.**

11. At the Install Location window, click **Next.** Wait for the installation to complete.

12. In the Completion window, click **Close**.

Using the Utility

Before using the utility, please ensure the following:

- *Write down the **Device Password (DPW)** (16-digit characters A-Z only) and **MAC Address** (12-digit characters a-f, A-F, 0-9) of each Powerline adapter as this will be required to change the encryption key for multiple Powerline adapters. See "Product Hardware Features" on page 2.*
- *Make sure your computer in which you are installing the utility is connected to your network and your Powerline adapters are also connected to your network.*
- *If you have changed your encryption key using the **Sync** button and you are creating a customized encryption key, it is required to reset all Powerline devices to defaults using the physical **Reset** button on your Powerline adapter first before using the utility. See "Product Hardware Features" on page 2.*
- *Please ensure that your Powerline adapters are already installed and connected and the Ethernet port on each adapter is connected to a device powered on.*
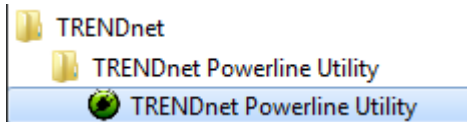
Upon completing the software installation, a desktop shortcut is automatically created.

Double-click the icon to start the utility or open the utility if it is already running. Closing the utility will exit the application.

You can also launch the utility from the Start Menu programs.

Start > Programs (or All Programs) > TRENDnet > TRENDnet Powerline Utility

Powerline Utility Overview

Map View Window

MAC Address (Local Device)

Firmware Version

(Local Device)
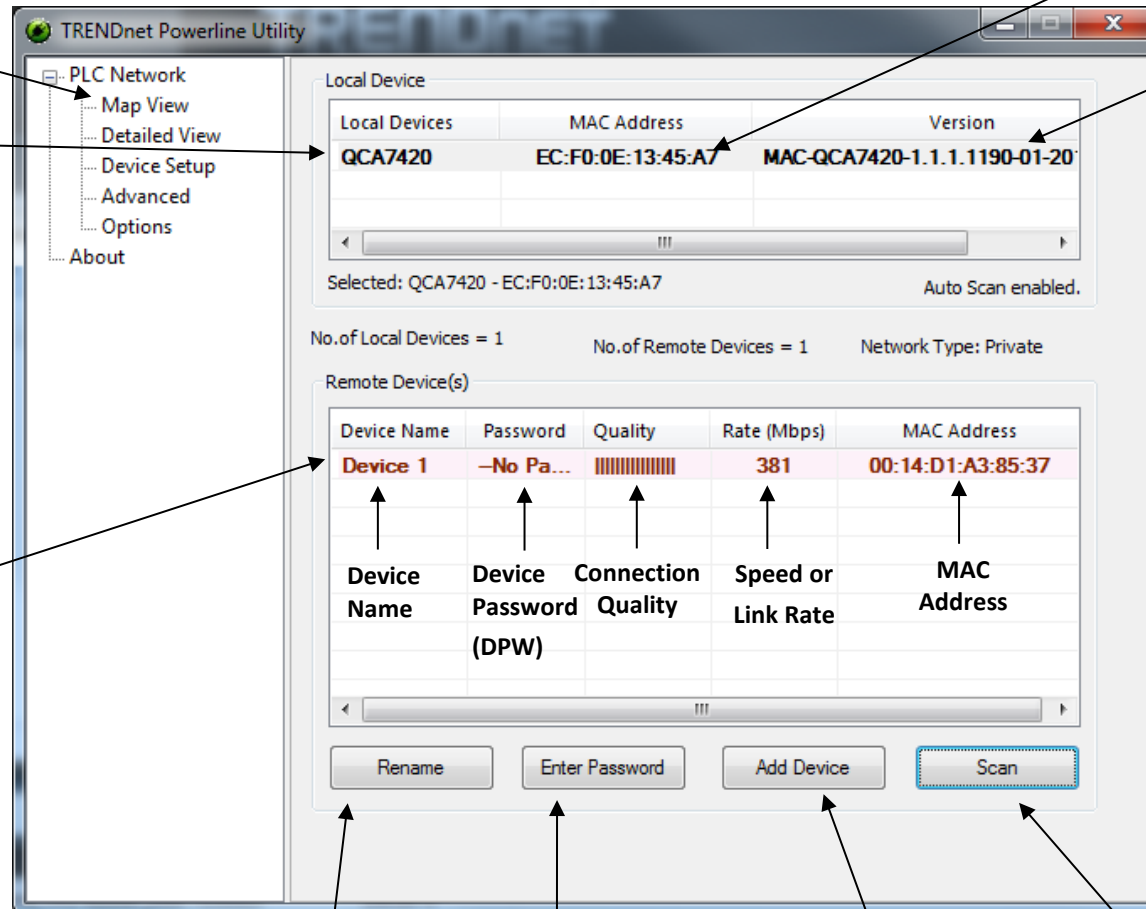
Map View Section

Local Device

The Powerline adapter connected to your router.

Note: If your computer is connected directly to your Powerline adapter, the Local Device listed will be the Powerline adapter your computer is directly connected to.

Remote Devices

Powerline adapters in remote locations that are connected to the selected Powerline adapter (Local Device) across the electrical system.

Note: If all of your Powerline adapters are already connected to your Powerline network, they will automatically detected and appear in the list. If not, you will need to add them manually.

Device Name

Device Password (DPW)

Connection Quality

Speed or Link Rate

MAC Address

Rename

Renames the listed Powerline adapter (Remote Device).

Enter Password

***Allows you to enter the DPW for the listed Powerline adapter(Remote Device)

THIS MUST BE ENTERED FOR ALL DEVICES TO CHANGE THE ENCRYPTION CODE

Add Device

Allows you to add a Powerline adapter to your Powerline network that is not listed (Remote Device).

Scan

Rescans the Powerline adapters that are connected to your Powerline network (Remote Device).

Powerline Utility Overview

Detailed View Window

Detailed View Section

System Information

Displays the device and other related information such as firmware version, MAC address, and encryption key (also called network password).

You can vertically scroll the window to view all of the system information.

Remote Device History (Log)

Displays Powerline adapters or other Powerline devices (Remote Device) that have been previously connected to or discovered on your Powerline Network.

Delete

Deletes or removes the selected entry listed in the Remote Device History (Log) (Remote Device).

Save Report

Saves the information contained in the System Information window to a text file on your computer.

Print Report

Prints the information contained in the System Information window.

Show Active Device(s) Only

Check this option to display only the currently connected powerline adapters. Uncheck to display all previously connected powerline adapters.

Powerline Utility Overview

Device Setup Window

Device Setup Section

Encryption Key

Encryption key for your Powerline network.

Note: *The default encryption key is **HomePlugAV**. If you have used the **Sync** button to change and generate a random encryption key, **Unknown Networkname** will be displayed.*

Use Default (Public Network)

Replaces the current encryption key value with the default **HomePlugAV**.

Note: *You will still need to apply the settings to your Powerline adapters by clicking **Set Local Device Only** or **Set All Devices**.*

Set Local Device

Changes the encryption key for the Powerline adapter listed as the Local Device on the adapter on the Main window.

Note*: If you change the encryption key for the Powerline adapter (Local Device), this will disconnect the Local Device Powerline adapter from the Powerline network.*

Set Remote Device(s)

Changes the encryption key for all or multiple Powerline adapters connected to your Powerline network.

Note: *Please make sure you have added and entered the DPW for all Powerline adapters in your Powerline network before applying this setting. If you do not, the encryption key will not change for any Powerline adapters without the DPW entered.*

Multicast Address

Click Set to synchronize the multicast address on all adapters in the same powerline network.

Powerline Utility Overview

Advanced Window

Advanced Section

Upgrade Firmware

Allows you to upgrade the local device powerline firmware.

Reset Device

Reboots the local device.

Factory Defaults

Resets the local device powerline configuration to factory default.

Set VLAN Tags

Set VLAN Tag for stream identity.

Set TOS Bits

Set Type of Service (ToS) bits to differentiate packets.

Powerline Utility Overview

Options Window

Options Section

Auto Scan

Check this option to automatically detect/scan for powerline devices.

Scan Interval

Click the up and down arrows to set amount of time in seconds between each auto scan for powerline devices.
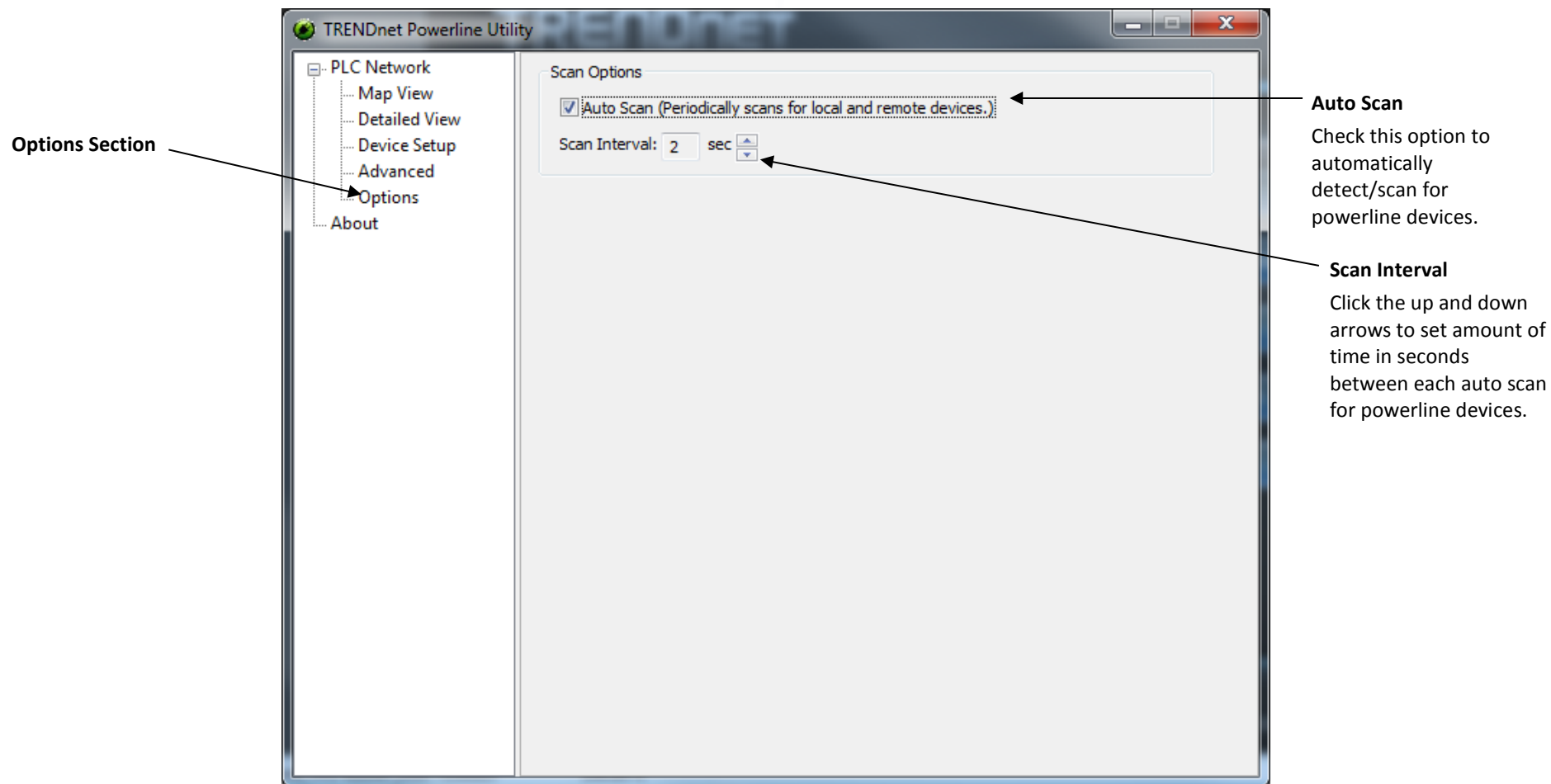
Powerline Utility Overview

About Window

Add adapters in the utility and create a customized encryption key

If you have not written down the **Device Password (DPW)** and **MAC address** for each of your Powerline adapters, please do so as it is required to applying the customized encryption key for all of your Powerline adapters using the utility. This information is on the sticker on the inside face of each adapter.

> **Note:** Write down the Device Password (DPW) (16-digit characters A-Z only) and MAC Address (12-digit characters a-f,A-F,0-9) of each Powerline adapter first before proceeding.

Example:

Location of Powerline Adapter	Device Password (DPW)	MAC Address
At Router	ZAYB-VIMV-YFAQ-ZFPA	EC:F0:0E:13:45:A7
John's Room	WECC-ZZYC-WJVY-GZRS	00:20:16:2A:16:06
Jane 's Room	UXMA-UOUP-IQXJ-UTYN	00:14:D1:A3:85:37

Note: It is recommended to ensure that your Powerline adapters are already installed and connected and the Ethernet port on each adapter is connected to a device powered on.
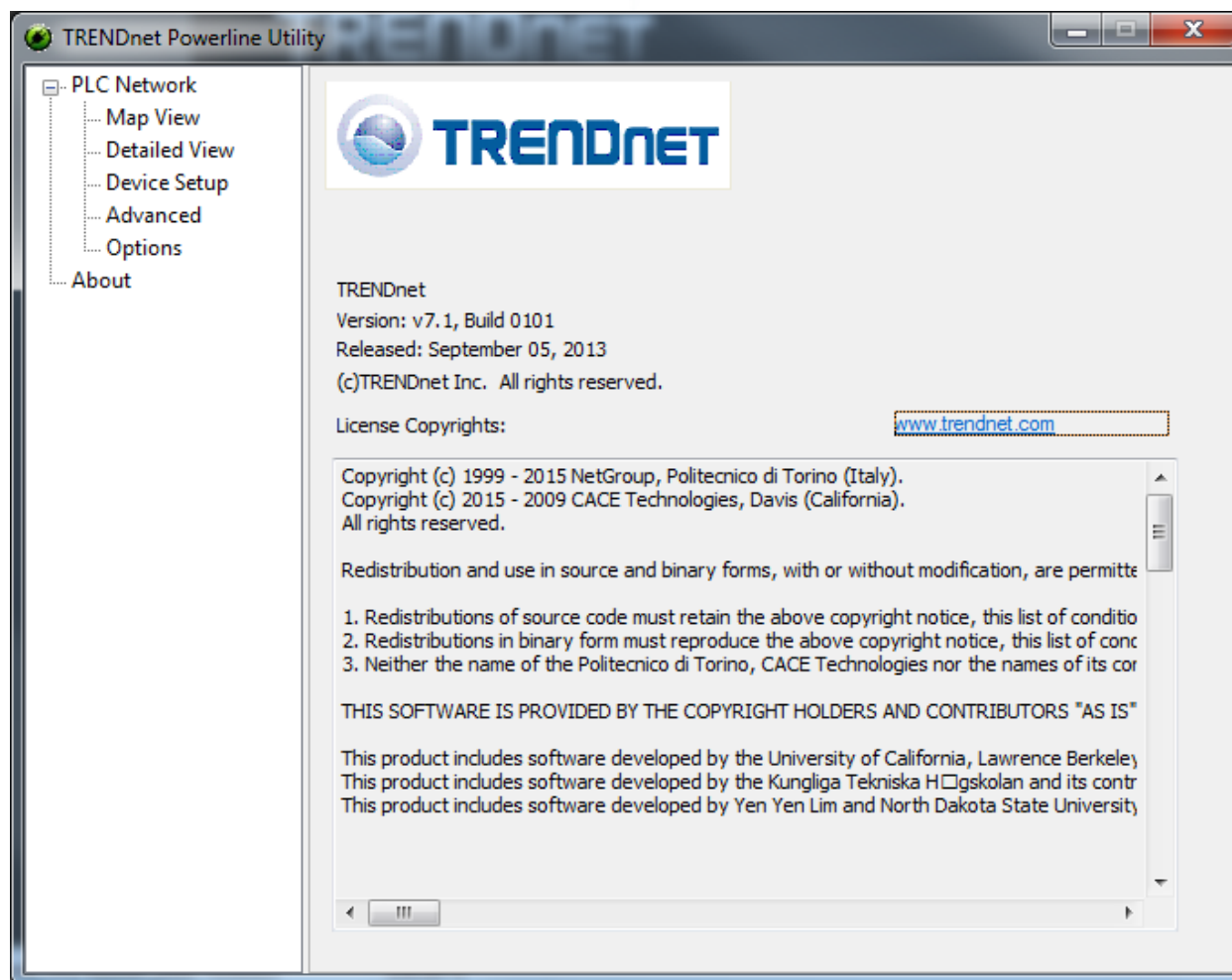
First, add all of the Powerline adapters to the utility and enter the Device Password (DPW) for each Powerline adapter to ensure you can change the encryption key for multiple adapters. This is required when using the Powerline utility to change the encryption key for multiple Powerline adapters.

To add automatically detected Powerline adapters to the Powerline Utility

1. Launch the Powerline Utility.

2. In the Powerline Utility Map View window, wait for the utility to automatically scan for Powerline adapters already connected to your Powerline network. If your Powerline adapters have already been installed and connected using the same encryption key, they should appear in the Remote Device list.

3. Select one of the Powerline adapters listed under Remote Device.

4. Click **Enter Password**.

5. Enter the Device Password (DPW) and click **OK.**

Note: Match the Device Password (DPW) to the corresponding MAC address.
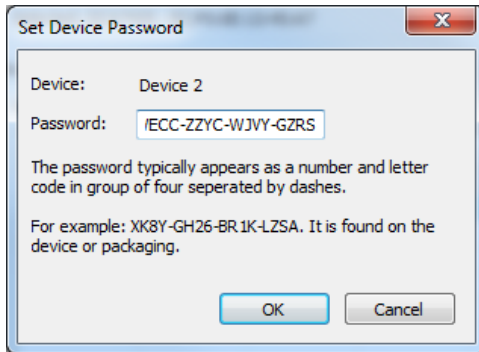
6. If successful, you will receive a message indicating that the password is correct. Click **OK.**
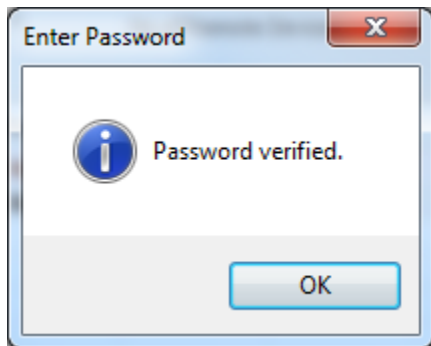
Repeat steps 2-6 for each additional Powerline adapter listed in Remote Device until you have added all of your remaining Powerline adapters before continuing to the next step "To create a customized encryption key".

To create a customized encryption key

1. In the Powerline Utility Device Setup window, under **Private Network Name**, enter the new encryption key for your Powerline network.
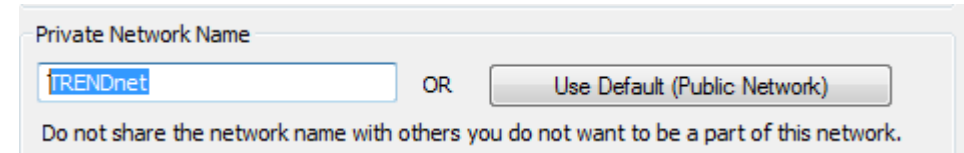
2. After you have entered your new Powerline encryption key, click **Set Remote Device(s)**.
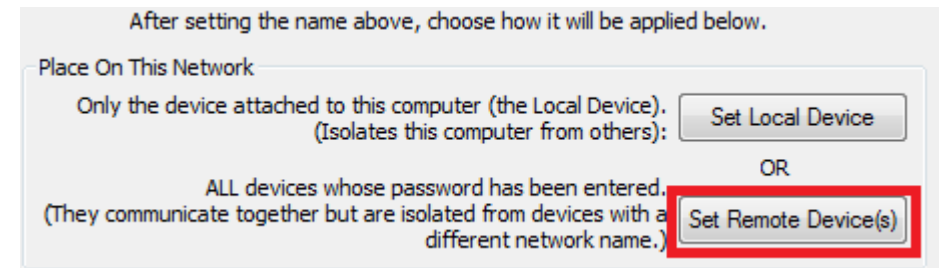
3. Click **OK**. If successful, you will receive a message indicating that all Powerline adapters were added to your network verifying that the encryption key was changed for all Powerline adapters. Click **OK**. *Note: The field will not display your customized encryption key. For security purposes, the field will display UnknownNetworkname.*
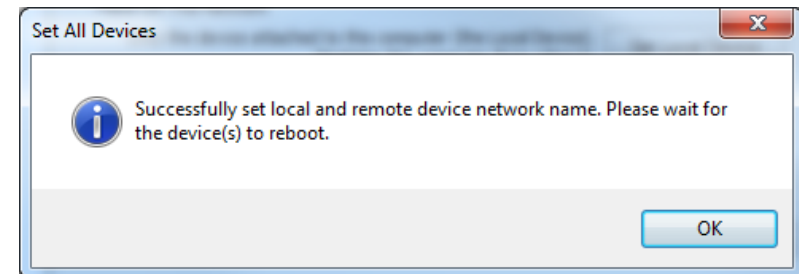
To rename the Powerline adapters

Note: Renaming the Powerline adapters (Remote devices) to describe the location of the device will help you to easily identify which Powerline adapter you are monitoring in the utility.

1. In the Powerline Utility Map View window, select one of the Powerline adapters listed under Remote Device.

2. Click **Rename**.
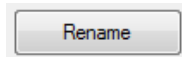
3. In the **New Name** field, enter the new name for the adapter.

4. Enter the new device name and press **Enter** on your keyboard.

5. To rename the adapter that is immediately connected to your computer, move your computer to a different adapter and restart the process listed above.

Upgrade Powerline Firmware

Note: The firmware can only be upgraded when your computer is directly connected to the Powerline adapter Ethernet port (also called network port) using an Ethernet cable (also called network cable). The Device Password (DPW) is not required when upgrading the firmware.

1. To check if firmware updates are available for your Powerline adapter, check your Powerline model. http://www.trendnet.com/downloads/

2. Save the zipped firmware file (.zip) and extract the file to your computer.

3. Make sure you connect your computer with the utility installed is directly connected to the Powerline adapter using an Ethernet cable (also called network) cable when upgrading the device firmware.
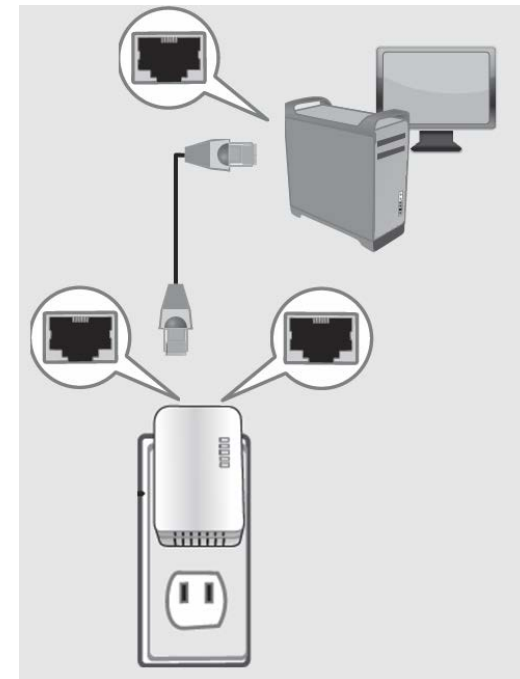
4. Launch the Powerline Utility by double-clicking the icon.

TRENDnet Powerline Utility
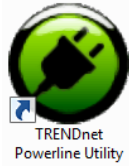
5. Click on the **Advanced** section in the left hand panel and in the *Upgrade Firmware* section, click **Upgrade**.
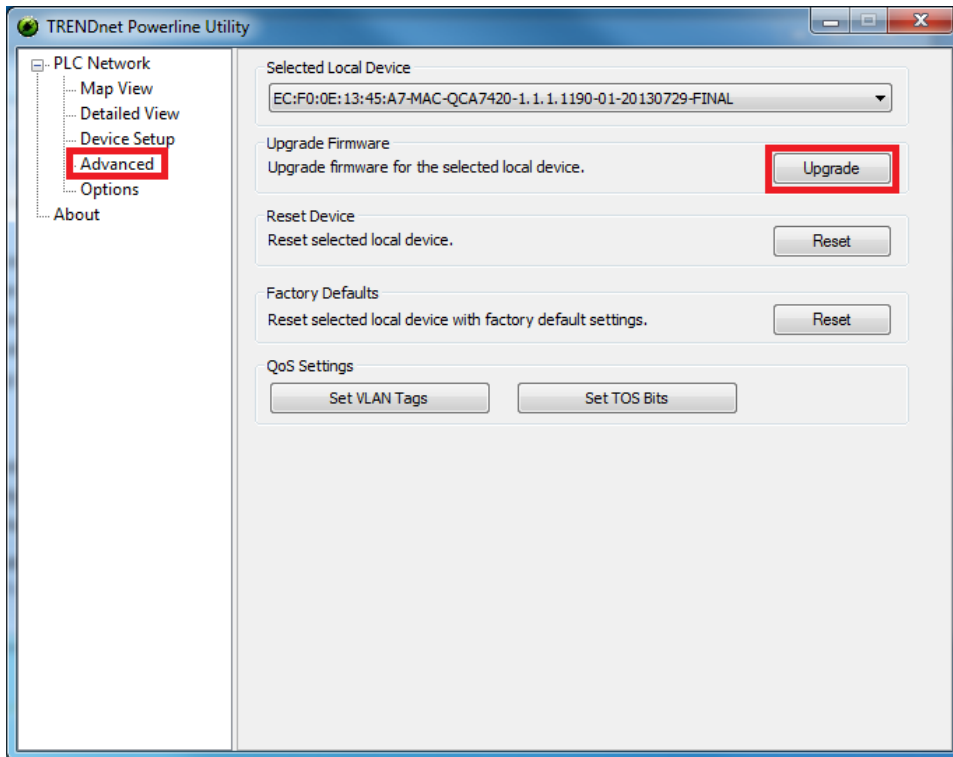
6. Navigate to the unzipped folder with the firmware files and select the **NVM** file.
(Ex. TPL-410AP-NVM-v1.1.1.1190-01-X-FINAL.nvm)
Important Note: Please make sure to select the correct firmware file.

7. Navigate to the unzipped folder with the firmware files and select the **PIB** file.
(Ex. TPL-410AP-PIB- v1.1.1.1190-01.pib)
Important Note: Please make sure to select the correct firmware file.

Wait until the firmware upload completed and the device reboot
Important! Do not turn off the device or press the reset button while this procedure is in progress.

Access Point Management Page Structure

Main

- Wizard
- Network Settings
- DHCP Server (Optional)

Wireless

- Basic
  - Enable/Disable Wireless
  - Wireless Network Name (SSID)
  - Channel
  - Mode
  - Channel Width
  - Enable/Disable SSID Broadcast
- Advanced
- Security
- Wi-Fi Protected Setup (WPS)
  - PBC (Push Button)
  - PIN
- MAC Filters

Powerline

- Setup
  - Enable/Disable Powerline
  - Change Powerline Encryption Key
- Sync
  - Virtual Powerline Sync Button

Status

- Information
- Wireless
- Powerline
- System Log

Administration

- Time Settings
- Password
- Firmware
  - Upgrade Firmware
- Restart (Soft Reboot)
- Reset (Reset to Factory Default)
- Backup/Restore
  - Backup configuration to file
  - Restore configuration from file

Technical Specifications

TPL-410AP

Standards

- IEEE 802.3
- IEEE 802.3u
- IEEE 802.3x
- IEEE 802.3az
- IEEE 802.11b
- IEEE 802.11g
- IEEE 802.11n (up to 300 Mbps)
- IEEE 1901 / HomePlug® AV

Device Interface

- 2 x 10/100 Mbps ports
- Sync/reset button
- WPS button
- Power switch
- LED indicators
- Power Plug (A: North America Type B (NEMA 5–15); EU: European Type C (CEE 7/16); UK : United Kingdom Type G (BS 1363))

Frequency Band

- 2 - 68 MHz

Networking Distance

- Powerline: 5,000 sq. ft. home or 300 m (980 ft.) linear distance over electrical power lines**

Security

- Wireless encryption: up to WPA2
- Powerline encryption: 128-bit AES (Advanced Encryption Standard)

Utility OS Compatibility (optional)

- Windows® 8.1, 8, 7, Vista, XP

Special Features

- Auto-connects to other TRENDnet Powerline adapters
- Additional Ethernet port for wired connectivity

Antenna Gain

- 2.4 GHz: 2 x 3 dBi

Wireless Output Power/Receiving Sensitivity

- 802.11b: 17 dBm (typical)/-76 dBm (typical) @ 11 Mbps
- 802.11g: 14 dBm (typical)/-65 dBm (typical) @ 54 Mbps
- 802.11n: 14 dBm (typical)/-61 dBm (typical) @ 300 Mbps

Power

- Input: 100 - 240 V AC, 50 - 60 Hz, 0.2 A
- Consumption: 8 Watts Max.

Operating Temperature

- 0 - 40° C (32 – 104° F)

Operating Humidity

- Max. 90% non-condensing

Certifications

- CE
- FCC

Dimensions

- A: 65 x 100 x 55 mm (2.56 x 3.94 x 1.97 in.)
- EU: 65 x 100 x 77 mm (2.56 x 3.94 x 3.03 in.)
- UK: 65 x 100 x 70 mm (2.56 x 3.94 x 2.76 in.)

Weight

- A: 153 g (5.4 oz.)
- EU: 164 g (5.8 oz.)
- UK: 168 g (5.9 oz.)

Warranty: 3 year limited

TPL-406E

Standards

- IEEE 802.3
- IEEE 802.3u
- IEEE 802.3x
- IEEE 1901 / HomePlug® AV

Device Interfaces

- 1 x 10/100 Mbps port
- Sync/reset button
- LED indicators
- Power Plug (A: North America Type B (NEMA 5–15); EU: European Type C (CEE 7/16); UK : United Kingdom Type G (BS 1363))

Frequency Band

- 2 - 68 MHz

Networking Distance

- 5,000 sq. ft. home or 300 m (980 ft.) linear distance over electrical power lines**

Security

- 128-Bit AES (Advanced Encryption Standard)

Utility OS Compatibility

- Windows® 8.1, 8, 7, Vista, XP

Special Features

- Auto-connects to other TRENDnet Powerline adapters

Power

- Input: 100 - 240 V AC, 50 /60 Hz, 0.1 A
  - Consumption: Active mode: 3 Watts (max.); Standby mode: 0.5 Watts (max.)

Operating Temperature

- 0 – 40° C (32 – 104° F)

Operating Humidity

- Max. 95 % non-condensing

Certifications

- CE
- FCC

Dimensions

- A: 70 x 50 x 43 mm (2.76 x 1.97 x 1.69 in.)
- EU: 70 x 50 x 63 mm (2.76 x 1.97 x 2.48 in.)
- UK: 70 x 50 x 58 mm (2.76 x 1.97 x 2.28 in.)

Weight

- A: 51 g (1.8 oz.)
- EU: 56.7 g (2.0 oz.)
- UK: 68 g (2.4 oz.)

Warranty: 3 year limited

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*Maximum wireless signal rates are referenced from IEEE 802.11 theoretical specifications. Actual data throughput and coverage will vary depending on interference, network traffic, building materials and other conditions.

** 500 Mbps is the maximum physical Powerline data rate. Data throughput may vary by circuit wire condition. Maximum of 8 adapters (nodes) recommended for streaming video across your network.

*** Powerline networking is limited to the same electrical system. Power strips, GFCI outlets, and AFCI circuit breakers may degrade Powerline signals.

Troubleshooting

Q: I typed http://TPL-410AP in my Internet Browser Address Bar, but an error message says "The page cannot be displayed." How can I access the access point management page?
Answer:
Assign your computer a static IP address in the subnet of 192.168.10.x (ex. 192.168.10.25) and access the access point using the default IP address 192.168.10.100.
http://192.168.10.100

Q: I typed http://192.168.10.100 in my Internet Browser Address Bar, but an error message says "The page cannot be displayed." How can I access the access point management page?
Answer:
1. Check your hardware settings again. See "Basic Installation" on page 7.
2. Make sure the LAN port you are connected to is on.
3. Make sure your network adapter TCP/IP settings are set to *Obtain an IP address automatically* or *DHCP* (see the steps below).
4. Make sure your computer is connected to one of the access point's LAN ports
5. Press on the factory reset button for 15 seconds, the release.
Windows 7

    a. Go into the **Control Panel**, click **Network and Sharing Center**.

    b. Click **Change Adapter Settings**, right-click the **Local Area Connection** icon.

    c. Then click **Properties** and click **Internet Protocol Version 4 (TCP/IPv4)**.

    d. Then click **Obtain an IP address automatically** and click **OK**.

Windows Vista

    a. Go into the **Control Panel**, click **Network and Internet**.
    b. Click **Manage Network Connections,** right-click the **Local Area Connection** icon and click **Properties**.
    c. Click **Internet Protocol Version (TCP/IPv4)** and then click **Properties**.
    d. Then click **Obtain an IP address automatically** and click **OK**.
Windows XP/2000

    a. Go into the **Control Panel**, double-click the **Network Connections** icon
    b. Right-click the **Local Area Connection** icon and the click **Properties**.
    c. Click **Internet Protocol (TCP/IP)** and click **Properties**.
    d. Then click **Obtain an IP address automatically** and click **OK**.

Note: If you are experiencing difficulties, please contact your computer or operating system manufacturer for assistance.

Q: The Wizard does not appear when I access the access point. What should I do?
Answer:
1. Click on Main and Wizard on the left hand side.
2. Near the top of the browser, "Pop-up blocked" message may appear. Right click on the message and select Always Allow Pop-ups from This Site.
3. Disable your browser's pop up blocker.

Q: I cannot connect wirelessly to the access point. What should I do?
Answer:
1. Double check that the Wireless LED on the access point is on.
2. Power cycle the router. Unplug the power to the access point. Wait 15 seconds, then plug the power back in to the access point.
3. Contact the manufacturer of your wireless network adapter and make sure the wireless network adapter is configured with the proper SSID. The default predefined SSID is printed on the device label on the bottom or on the sticker on the side of the unit.
4. To verify whether or not wireless is enabled, login to the access point management page, click on *Basic and Wireless*.
5. Please see "Steps to improve wireless connectivity" on page 18 if you continue to have wireless connectivity problems.

Please reference the items below if you continue to experience difficulty with installing and using your Powerline adapters.

- Do not plug the Powerline adapters into a power strip. Make sure to plug the adapters directly into a power outlet and not through power strip. Using adapters through a power strip may negatively affect Powerline connectivity and performance.
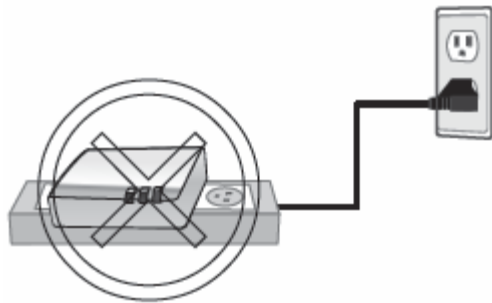
- Do not use the Sync button for more than 2 Powerline adapters to connect simultaneously. Wait for each Powerline adapter to connect to your Powerline network one at a time before connecting the next adapter. Using more than one adapter to Sync simultaneously may cause some of your adapters not to Sync and establish connection to your Powerline network.

- Power-cycle the Powerline adapters by disconnecting them from their power outlets for 15 seconds and then reconnect them.

- If the Powerline (PL) LED is red, try plugging the Powerline adapter into another available power outlet. The quality of the connection may be better in a different power outlet.

- If you are having issues connecting the Powerline adapters after changing the encryption key using the Sync button or Powerline utility, reset the Powerline adapters to defaults using the physical Reset button.

- Using a pin or paperclip; press and hold the Reset button for 1 second on each Powerline adapter. All LEDs will turn off then turn back on. This will reset the Powerline adapters to their default settings. The default encryption key is HomePlugAV.

- The Powerline adapters can provide better connectivity and performance when plugged directly into a power outlet. Connecting the Powerline adapters to a power strip or surge protector may degrade or block Powerline signals.

- Avoid using the Powerline adapters on GFI protected outlets and electrical systems with AFCI circuit breakers. They may degrade or block Powerline signals.
- The Powerline adapters should not be used in areas with excessive heat.
- Florescent and incandescent lighting can generate significant Powerline interference.
- If your building has more than one circuit breaker box, the Powerline adapter may not be able to establish connectivity between them. In this case, connect a Powerline adapter into a power outlet located on each of the circuit breaker boxes. Then connect an Ethernet cable between the Powerline adapters to bridge the two circuits together.

In addition to this User's Guide, you can find help below:

- http://www.trendnet.com/support
  (documentation, downloads, FAQs, how to contact technical support)

- Autorun CD (Quick Installation Guide)

Appendix

How to find your IP address?

Note: Please note that although the following procedures provided to follow for your operating system on configuring your network settings can be used as general guidelines, however, it is strongly recommended that you consult your computer or operating system manufacturer directly for assistance on the proper procedure for configuring network settings.

Command Prompt Method

Windows® 2000/XP/Vista/7/8/8.1

1. On your keyboard, press **Windows Logo+R** keys simultaneously to bring up the Run dialog box.

2. In the dialog box, type *cmd* to bring up the command prompt.

3. In the command prompt, type *ipconfig /all* to display your IP address settings.

MAC OS® X

1. Navigate to your **Applications** folder and open **Utilities**.

2. Double-click on **Terminal** to launch the command prompt.

3. In the command prompt, type *ipconfig getifaddr <en0 or en1>* to display the wired or wireless IP address settings*.*

Note: en0 is typically the wired Ethernet and en1 is typically the wireless Airport interface.

Graphical Method

MAC OS® 10.6/10.5
1. From the Apple menu, select **System Preferences**.
2. In System Preferences, from the **View** menu, select **Network**.
3. In the Network preference window, click a network port (e.g., Ethernet, AirPort, modem). If you are connected, you'll see your IP address settings under "Status:"

MAC OS® 10.4
1. From the Apple menu, select **Location**, and then **Network Preferences**.
2. In the Network Preference window, next to "Show:", select **Network Status**. You'll see your network status and your IP address settings displayed.

Note: If you are experiencing difficulties, please contact your computer or operating system manufacturer for assistance.

How to configure your network settings to obtain an IP address automatically or use DHCP?

Note: Please note that although the following procedures provided to follow for your operating system on configuring your network settings can be used as general guidelines, however, it is strongly recommended that you consult your computer or operating system manufacturer directly for assistance on the proper procedure for configuring network settings.

Windows® 7/8/8.1
    a. Go into the **Control Panel**, click **Network and Sharing Center**.
    b. Click **Change Adapter Settings**, right-click the **Local Area Connection** icon.
    c. Then click **Properties** and click **Internet Protocol Version 4 (TCP/IPv4)**.
    d. Then click **Obtain an IP address automatically** and click **OK**.

Windows® Vista
    a. Go into the **Control Panel**, click **Network and Internet**.
    b. Click **Manage Network Connections,** right-click the **Local Area Connection** icon and click **Properties**.
    c. Click **Internet Protocol Version (TCP/IPv4)** and then click **Properties**.
    d. Then click **Obtain an IP address automatically** and click **OK**.

Windows® XP/2000
    a. Go into the **Control Panel**, double-click the **Network Connections** icon
    b. Right-click the **Local Area Connection** icon and the click **Properties**.
    c. Click **Internet Protocol (TCP/IP)** and click **Properties**.
    d. Then click **Obtain an IP address automatically** and click **OK**.

MAC OS 10.4/10.5/10.6
    a. From the **Apple**, drop-down list, select **System Preferences**.
    b. Click the **Network** icon.
    c. From the **Location** drop-down list, select **Automatic**.
    d. Select and view your Ethernet connection.
        In MAC OS 10.4, from the **Show** drop-down list, select **Built-in Ethernet** and select the **TCP/IP** tab.
        In MAC OS 10.5/10.6, in the left column, select **Ethernet**.
    e. Configure TCP/IP to use DHCP.

In MAC 10.4, from the **Configure IPv4**, drop-down list, select **Using DHCP** and click the **Apply Now** button.
In MAC 10.5, from the **Configure** drop-down list, select **Using DHCP** and click the **Apply** button.
In MAC 10.6, from the **Configure** drop-down list, select **Using DHCP** and click the **Apply** button.
f. Restart your computer.

Note: If you are experiencing difficulties, please contact your computer or operating system manufacturer for assistance.

How to configure your network settings to use a static IP address?

Note: Please note that although the following procedures provided to follow for your operating system on configuring your network settings can be used as general guidelines, however, it is strongly recommended that you consult your computer or operating system manufacturer directly for assistance on the proper procedure for configuring network settings.

Windows® 7/8/8.1

a. Go into the **Control Panel**, click **Network and Sharing Center**.

b. Click **Change Adapter Settings**, right-click the **Local Area Connection** icon.

c. Then click **Properties** and click **Internet Protocol Version 4 (TCP/IPv4)**.

d. Then click **Use the following IP address,** and assign your network adapter a static IP address. Click **OK**

Windows® Vista

a. Go into the **Control Panel**, click **Network and Internet**.
b. Click **Manage Network Connections,** right-click the **Local Area Connection** icon and click **Properties**.
c. Click **Internet Protocol Version (TCP/IPv4)** and then click **Properties**.

d. Then click **Use the following IP address,** and assign your network adapter a static IP address. Click **OK**

Windows® XP/2000

a. Go into the **Control Panel**, double-click the **Network Connections** icon
b. Right-click the **Local Area Connection** icon and the click **Properties**.
c. Click **Internet Protocol (TCP/IP)** and click **Properties**.

d. Then click **Use the following IP address,** and assign your network adapter a static IP address. Click **OK**

MAC OS® 10.4/10.5/10.6

a. From the **Apple**, drop-down list, select **System Preferences**.
b. Click the **Network** icon.
c. From the **Location** drop-down list, select **Automatic**.
d. Select and view your Ethernet connection.

How to find your MAC address?

In Windows 2000/XP/Vista/7/8,

Your computer MAC addresses are also displayed in this window, however, you can type *getmac –v* to display the MAC addresses only.

In MAC OS 10.4,

1. **Apple Menu > System Preferences > Network**

2. From the **Show** menu, select **Built-in Ethernet**.

3. On the **Ethernet** tab, the **Ethernet ID** is your MAC Address.

In MAC OS 10.5/10.6,

1. **Apple Menu > System Preferences > Network**

2. Select **Ethernet** from the list on the left.

3. Click the **Advanced** button.

3. On the **Ethernet** tab, the **Ethernet ID** is your MAC Address.

How to connect to a wireless network using the built-in Windows utility?

Note: Please note that although the following procedures provided to follow for your operating system on configuring your network settings can be used as general guidelines, however, it is strongly recommended that you consult your computer or operating system manufacturer directly for assistance on the proper procedure for connecting to a wireless network using the built-in utility.

Windows® 7/8/8.1

1. Open Connect to a Network by clicking the network icon (or) in the notification area.

2. In the list of available wireless networks, click the wireless network you would like to connect to, then click **Connect.**

4. You may be prompted to enter a security key in order to connect to the network.

5. Enter in the security key corresponding to the wireless network, and click **OK**.

Windows® Vista

1. Open Connect to a Network by clicking the **Start Button**. and then click **Connect To.**

2. In the **Show** list, click **Wireless**.

3. In the list of available wireless networks, click the wireless network you would like to connect to, then click **Connect.**

4. You may be prompted to enter a security key in order to connect to the network.

5. Enter in the security key corresponding to the wireless network, and click **OK**.

Windows® XP

1. Right-click the network icon in the notification area, then click **View Available Wireless Networks**.

2. In **Connect to a Network**, under **Available Networks**, click the wireless network you would like to connect to.

3. You may be prompted to enter a security key in order to connect to the network.

4. Enter in the security key corresponding to the wireless network, and click **Connect**.

Overlapping Powerline networks

It is possible to create multiple Powerline networks on the same electrical system separated and grouped by different network encryption keys. The Powerline networks will work and communicate independently of each other which can provide security between different groups of Powerline adapters. For example, if you have five powerline adapters (Adapter A, Adapter B, Adapter C, Adapter D, Adapter E), you can group Adapters A,B, and C together on one powerline network and group Adapters D and E on a different Powerline network. Each group will use a different encryption key.

Note: It is recommended that only a maximum of up to 4 Powerline networks can be created per electrical system. Any additional Powerline networks above the recommended may result in significant degradation in Powerline performance.
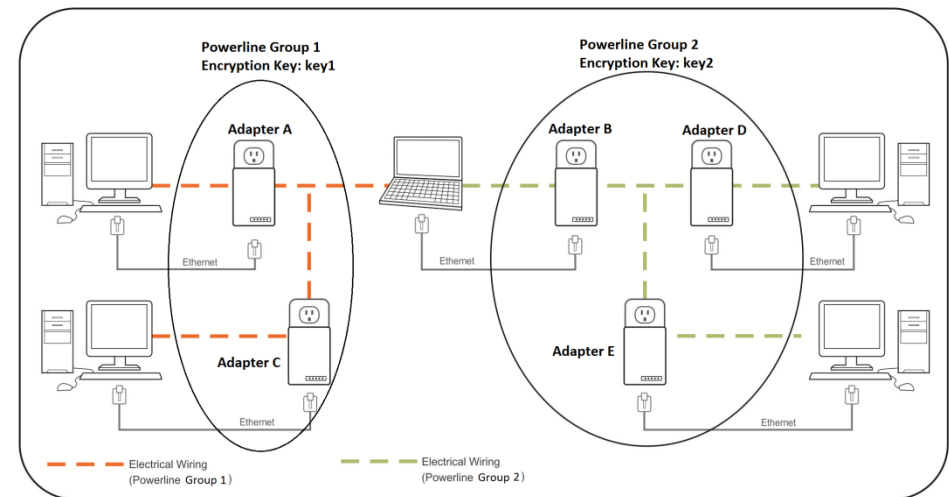
Federal Communication Commission Interference Statement

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC Rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation. This equipment generates, uses and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications. However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one of the following measures:

- Reorient or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.
- Consult the dealer or an experienced radio/TV technician for help.

FCC Caution: Any changes or modifications not expressly approved by the party responsible for compliance could void the user's authority to operate this equipment.

This device complies with Part 15 of the FCC Rules. Operation is subject to the following two conditions: (1) This device may not cause harmful interference, and (2) this device must accept any interference received, including interference that may cause undesired operation.

For product available in the USA/Canada market, only channel 1~11 can be operated. Selection of other channels is not possible.

This device and it's antennas(s) must not be co-located or operating in conjunction with any other antenna or transmitter except in accordance with FCC multi-transmitter product procedures.

IMPORTANT NOTE:

FCC Radiation Exposure Statement:

This equipment complies with FCC radiation exposure limits set forth for an uncontrolled environment. This equipment should be installed and operated with minimum distance 20cm between the radiator & your body.

RoHS

This product is RoHS compliant.

Europe – EU Declaration of Conformity

This device complies with the essential requirements of the R&TTE Directive 1999/5/EC, 2004/108/EC, 2006/95/EC and 2009/125/EC.
Regulation (EC) No. 1275/2008
EN 55022: 2010/AC: 2011 Class B
EN 55024: 2010
EN 61000-3-2: 2006/A2: 2009
EN 61000-3-3: 2008
CISPR/IXX/CDV Opt B
EN 50412-2-1: 2005/AC: 2009
EN 62311: 2008
EN60950-1: 2006 + A11 : 2009 + A1: 2010 + A12: 2011

Safety of Information Technology Equipment

EN 50385: 2002
Product standard to demonstrate the compliance of radio base stations and fixed terminal stations for wireless telecommunication systems with the basic restrictions or the reference levels related to human exposure to radio frequency electromagnetic fields (110MHz - 40 GHz) - General public
EN 300 328 V1.7.1: (2006-10)
Electromagnetic compatibility and Radio spectrum Matters (ERM); Wideband Transmission systems; Data transmission equipment operating in the 2,4 GHz ISM band and using spread spectrum modulation techniques; Harmonized EN covering essential requirements under article 3.2 of the R&TTE Directive
EN 301 489-1 V1.9.2: (2011-09)
Electromagnetic compatibility and Radio Spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment and services; Part 1: Common technical requirements
EN 301 489-17 V2.2.1: (2012-09)
Electromagnetic compatibility and Radio spectrum Matters (ERM); ElectroMagnetic Compatibility (EMC) standard for radio equipment; Part 17: Specific conditions for 2,4 GHz wideband transmission systems, 5 GHz high performance RLAN equipment and 5,8 GHz Broadband Data Transmitting Systems

In Italy the end-user should apply for a license at the national spectrum authorities in order to obtain authorization to use the device for setting up outdoor radio links and/or for supplying public access to telecommunications and/or network services.

This device may not be used for setting up outdoor radio links in France and in some areas the RF output power may be limited to 10 mW EIRP in the frequency range of 2454 – 2483.5 MHz. For detailed information the end-user should contact the national spectrum authority in France.

cs Česky [Czech]	TRENDnet tímto prohlašuje, že tento TPL-410AP je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 1999/5/ES, 2004/108/ES, 2006/95/ES, a 2009/125/ES.
da Dansk [Danish]	Undertegnede TRENDnet erklærer herved, at følgende udstyr TEW-TPL-410AP overholder de væsentlige krav og øvrige relevante krav i direktiv 1999/5/EF, 2004/108/EF, 2006/95/EF, og 2009/125/EF.
de Deutsch [German]	Hiermit erklärt TRENDnet, dass sich das Gerät TPL-410AP in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 1999/5/EG, 2004/108/EG, 2006/95/EG und 2009/125/EG befindet.
et Eesti [Estonian]	Käesolevaga kinnitab TRENDnet seadme TPL-410AP vastavust direktiivi 1999/5/EÜ, 2004/108/EÜ, 2006/95/EÜ ja 2009/125/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.
en English	Hereby, TRENDnet, declares that this TPL-410AP is in compliance with the essential requirements and other relevant provisions of Directive 1999/5/EC, 2004/108/EC, 2006/95/EC, and 2009/125/EC.
es Español [Spanish]	Por medio de la presente TRENDnet declara que el TPL-410AP cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 1999/5/CE, 2004/108/CE, 2006/95/CE, 2009/125/CE y.
el Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑTRENDnet ΔΗΛΩΝΕΙ ΟΤΙ TPL-410AP ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 1999/5/ΕΚ, 2004/108/ΕΚ, 2006/95/ΕΚ, 2009/125/ΕΚ και.
fr Français [French]	Par la présente TRENDnet déclare que l'appareil TPL-410AP est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 1999/5/CE, 2004/108/CE, 2006/95/CE, 2009/125/CE et.
it Italiano[Italian]	Con la presente TRENDnet dichiara che questo TPL-410AP è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 1999/5/CE, 2004/108/CE, 2006/95/CE e 2009/125/CE.
lv Latviski [Latvian]	AršoTRENDnetdeklarē, ka TPL-410AP atbilstDirektīvas 1999/5/EK, 2004/108/EK, 2006/95/EK, un 2009/125/EK būtiskajāmprasībām un citiemar to saistītajiemnoteikumiem.

lt Lietuvių [Lithuanian]	Šiuo TRENDnet deklaruoja, kad šis TPL-410AP atitinka esminius reikalavimus ir kitas 1999/5/EB, 2004/108/EB, 2006/95/EB ir 2009/125/EB Direktyvos nuostatas.
nl Nederlands [Dutch]	Hierbij verklaart TRENDnet dat het toestel TPL-410AP in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 1999/5/EG, 2004/108/EG, 2006/95/EG, en 2009/125/EG.
mt Malti [Maltese]	Hawnhekk, TRENDnet, jiddikjara li dan TPL-410AP jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 1999/5/KE, 2004/108/KE, 2006/95/KE, u 2009/125/KE.
hu Magyar [Hungarian]	Alulírott, TRENDnet nyilatkozom, hogy a TPL-410AP megfelel a vonatkozó alapvető követelményeknek és az 1999/5/EK irányelv, a 2004/108/EK a 2006/95/EK és a 2009/125/EK irányelv egyéb előírásainak.
pl Polski [Polish]	Niniejszym TRENDnet oświadcza, że TPL-410AP jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 1999/5/WE, 2004/108/WE, 2006/95/WE i 2009/125/WE.
pt Português [Portuguese]	TRENDnet declara que este TPL-410AP está conforme com os requisitos essenciais e outras disposições da Directiva 1999/5/CE, 2004/108/CE, 2006/95/CE e 2009/125/CE.
sl Slovensko [Slovenian]	TRENDnet izjavlja, da je ta TPL-410AP v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 1999/5/ES, 2004/108/ES, 2006/95/ES in 2009/125/ES.
sk Slovensky [Slovak]	TRENDnettýmtovyhlasuje, že TPL-410AP spĺňazákladnépožiadavky a všetkypríslušnéustanoveniaSmernice 1999/5/ES, 2004/108/ES, 2006/95/ES, a 2009/125/ES.
fi Suomi [Finnish]	TRENDnet vakuuttaa täten että TPL-410AP tyyppinen laite on direktiivin 1999/5/EY, 2004/108/EY, 2006/95/EY ja 2009/125/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
sv Svenska [Swedish]	Härmed intygar TRENDnet att denna TPL-410AP står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 1999/5/EG, 2004/108/EG, 2006/95/EG och 2009/125/EG.

cs Česky [Czech]	TRENDnet tímto prohlašuje, že tento TPL-406E je ve shodě se základními požadavky a dalšími příslušnými ustanoveními směrnice 2004/108/ES.		**mt** Malti [Maltese]	Hawnhekk, TRENDnet, jiddikjara li dan TPL-406E jikkonforma mal-ħtiġijiet essenzjali u ma provvedimenti oħrajn relevanti li hemm fid-Dirrettiva 2004/108/EC.
da Dansk [Danish]	Undertegnede TRENDnet erklærer herved, at følgende udstyr TPL-406E overholder de væsentlige krav og øvrige relevante krav i direktiv 2004/108/EF.		**hu** Magyar [Hungarian]	Alulírott, TRENDnet nyilatkozom, hogy a TPL-406E megfelel a vonatkozó alapvetõ követelményeknek és az 2004/108/EC irányelv egyéb elõírásainak.
de Deutsch [German]	Hiermit erklärt TRENDnet, dass sich das Gerät TPL-406E in Übereinstimmung mit den grundlegenden Anforderungen und den übrigen einschlägigen Bestimmungen der Richtlinie 2004/108/EG befindet.		**pl** Polski [Polish]	Niniejszym TRENDnet oświadcza, że TPL-406E jest zgodny z zasadniczymi wymogami oraz pozostałymi stosownymi postanowieniami Dyrektywy 2004/108/EC.
et Eesti [Estonian]	Käesolevaga kinnitab TRENDnet seadme TPL-406E vastavust direktiivi 2004/108/EÜ põhinõuetele ja nimetatud direktiivist tulenevatele teistele asjakohastele sätetele.		**pt** Português [Portuguese]	TRENDnet declara que este TPL-406E está conforme com os requisitos essenciais e outras disposições da Directiva 2004/108/CE.
en English	Hereby, TRENDnet, declares that this TPL-406E is in compliance with the essential requirements and other relevant provisions of Directive 2004/108/EC.		**sl** Slovensko [Slovenian]	TRENDnet izjavlja, da je ta TPL-406E v skladu z bistvenimi zahtevami in ostalimi relevantnimi določili direktive 2004/108/ES.
es Español [Spanish]	Por medio de la presente TRENDnet declara que el TPL-406E cumple con los requisitos esenciales y cualesquiera otras disposiciones aplicables o exigibles de la Directiva 2004/108/CE.		**sk** Slovensky [Slovak]	TRENDnet týmto vyhlasuje, že TPL-406E spĺňa základné požiadavky a všetky príslušné ustanovenia Smernice 2004/108/ES.
el Ελληνική [Greek]	ΜΕ ΤΗΝ ΠΑΡΟΥΣΑ TRENDnet ΔΗΛΩΝΕΙ ΟΤΙ TPL-406E ΣΥΜΜΟΡΦΩΝΕΤΑΙ ΠΡΟΣ ΤΙΣ ΟΥΣΙΩΔΕΙΣ ΑΠΑΙΤΗΣΕΙΣ ΚΑΙ ΤΙΣ ΛΟΙΠΕΣ ΣΧΕΤΙΚΕΣ ΔΙΑΤΑΞΕΙΣ ΤΗΣ ΟΔΗΓΙΑΣ 2004/108/ΕΚ.		**fi** Suomi [Finnish]	TRENDnet vakuuttaa täten että TPL-406E tyyppinen laite on direktiivin 2004/108/EY oleellisten vaatimusten ja sitä koskevien direktiivin muiden ehtojen mukainen.
fr Français [French]	Par la présente TRENDnet déclare que l'appareil TPL-406E est conforme aux exigences essentielles et aux autres dispositions pertinentes de la directive 2004/108/CE.		**sv** Svenska [Swedish]	Härmed intygar TRENDnet att denna TPL-406E står I överensstämmelse med de väsentliga egenskapskrav och övriga relevanta bestämmelser som framgår av direktiv 2004/108/EG.
it Italiano [Italian]	Con la presente TRENDnet dichiara che questo TPL-406E è conforme ai requisiti essenziali ed alle altre disposizioni pertinenti stabilite dalla direttiva 2004/108/CE.			
lv Latviski [Latvian]	Ar šo TRENDnet deklarē, ka TPL-406E atbilst Direktīvas 2004/108/EK būtiskajām prasībām un citiem ar to saistītajiem noteikumiem.			
lt Lietuvių [Lithuanian]	Šiuo TRENDnet deklaruoja, kad šis TPL-406E atitinka esminius reikalavimus ir kitas 2004/108/EB Direktyvos nuostatas.			
nl Nederlands [Dutch]	Hierbij verklaart TRENDnet dat het toestel TPL-406E in overeenstemming is met de essentiële eisen en de andere relevante bepalingen van richtlijn 2004/108/EG.			

Limited Warranty

TRENDnet warrants its products against defects in material and workmanship, under normal use and service, for the following lengths of time from the date of purchase.

TPL-410AP / TPL-410APK – 3 Years Warranty

AC/DC Power Adapter, Cooling Fan, and Power Supply carry 1 year warranty.

If a product does not operate as warranted during the applicable warranty period, TRENDnet shall reserve the right, at its expense, to repair or replace the defective product or part and deliver an equivalent product or part to the customer. The repair/replacement unit's warranty continues from the original date of purchase. All products that are replaced become the property of TRENDnet. Replacement products may be new or reconditioned. TRENDnet does not issue refunds or credit. Please contact the point-of-purchase for their return policies.

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